

HITACHI

SERVICE MANUAL

NR 0001E

13VR3B/20VR4B

NTSC GTV Chassis R/C : CLU-361VR

CONTENTS

SAFETY PRECAUTIONS	2
PRODUCT SAFETY NOTICE	3
SPECIFICATIONS	4
GENERAL INFORMATION	5
NEW ADOPTION CIRCUIT EXPLANATION	7
SERVICING POSITIONS	9
ELECTRIC CIRCUIT ADJUSTMENT	11
INSPECTION METHOD BY TROUBLE INDICATION SYSTEM	16
TROUBLE SHOOTING	22
BLOCK DIAGRAM	27
WIRING DIAGRAM	29
BASIC CIRCUIT DIAGRAM	31
PRINTED WIRING BOARD	57
ASSEMBLY WIRING DIAGRAM	63
EXPLODED VIEW	65
REPLACEMENT PARTS LIST	67

CAUTION: Before servicing this chassis, it is important that the service technician read the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

This television receiver will display television Closed Captioning (CC) or ☐ in accordance with paragraph 15.119 of the FCC rules.

SAFETY NOTICE

USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by Δ on schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing this chassis, it is important that the service technician read and follow the "Safety Precautions" and "Product Safety Notices" in this Service Manual.

* For continued x-radiation protection, replace picture tube with original type or Hitachi approved equivalent type.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

TV/VCR COMBINATION TELEVISION

May 1995

HEPM

SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in, service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep picture tube away from the body while handling.
2. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a "HOT" chassis receiver.
3. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, non-metallic knobs, adjustment and compartment cover-shields, isolation resistors-capacitors, etc.
4. When service is required, observe the original lead dress. Extra care should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacturer's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

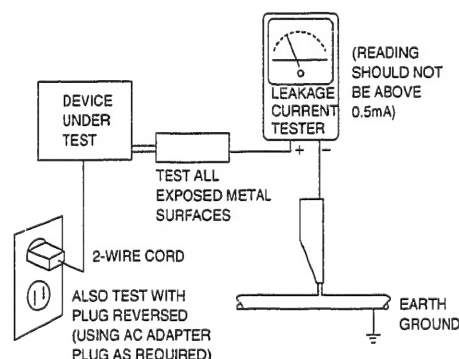
Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.24M Ω and a maximum resistor reading of 5.2M Ω . Any resistance value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a AC 120V 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on. Using a "leakage Current Tester (Simpson Model 229 or equivalent)", measure for current from all exposed metal parts of the cabinet (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

High Voltage

This receiver is provided with a hold down circuit for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this hold down circuit is operated correctly.

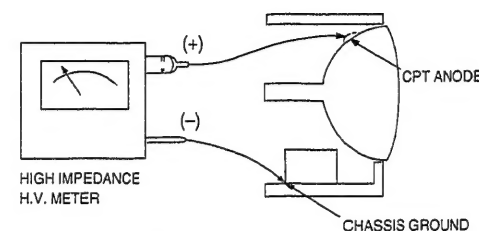
Serviceman warning

With minimum Black Level and Picture, the operating high voltage in this receiver is lower than 13VR3B...27.0kV, 20VR4B...31.0kV. In case any component having influence on the high voltage is replaced, confirm that high voltage with minimum Black Level and Picture is lower than 13VR3B...27.0kV, 20VR4B...31.0kV.

To measure H.V. use a high impedance H.V. meter. Connect (-) to chassis earth and (+) to the CPT anode button (See the following connection diagram).

NOTE: Turn the power switch off without fail before the connection to the Anode button is made.

X-radiation



TUBE: The primary source of X-radiation in this receiver is the picture tube. The tube utilized in this chassis is specially constructed to limit X-radiation emission.

For continued X-radiation protection, the replacement tube must be the same type as the original, HITACHI approved type.

When troubleshooting and making test measurements in a receiver with an excessive high voltage problem, avoid coming unnecessarily close to the picture tube and the high voltage component.

Do not operate the chassis longer than is necessary to locate the cause of the excessive voltage.

PRODUCT SAFETY NOTICE

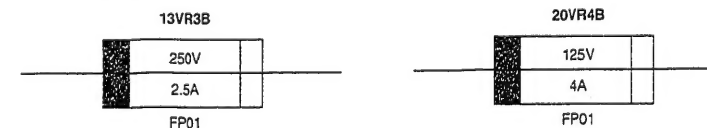
Many electrical and mechanical parts in HITACHI television receiver have special safety related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual. Electrical components having such features are identified with a Δ mark in the schematics and parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards. Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of, HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.

CAUTION

The following symbol near the fuse indicates fast operating fuse to be replaced. Fuse ratings appear within the symbol.

Example:



Ratings of fuses are FP01(13VR3B) ... 2.5A-250V, FP01(20VR4B) ... 4A-125V. Replace with the same type fuse for continued protection against fire.

SPECIFICATIONS

Display

- Picture Tube 13VR3B: 13 inches measured diagonal 90°C deflection Picture Tube
20VR4B: 20 inches measured diagonal 90°C deflection Picture Tube

VCR

- Format VHS
- Record/Playback System Video : 4 Heads
Audio : Monaural record/playback system
- Tape Speed 33.35 mm/sec (SP), 16.67 mm/sec (LP), 11.12 mm/sec (EP)

General

- Power Source 120V AC, 60Hz
- Power Consumption 13VR3B : Approx. 71W
20VR4B : Approx. 89W
- Television System EIA Standard NTSC color
- Channel Coverage 181 ch.
VHF : 2 ~ 13
UHF : 14 ~ 69
CATV Mid Band : A-5 ~ A-1
Super Band : J-W
Hyper Band : W + 1 ~ W + 28
Ultra Band : W + 29 ~ W + 84
- Operating Temperature 41°F ~ 104°F (5°C ~ 40°C)
- Dimensions

	13VR3B	20VR4B
Height (in.)	15 9/18	19 7/8
Width (in.)	15 9/16	20 1/2
Depth (in.)	14 3/4	18 5/16
Weight (lbs)	29.0	52.0

Note:

Due to improvements, specifications in this operating guide are subject to change without notice.

TECHNICAL CAUTIONS

High voltage limiter circuit operation check

1. Connect the high voltage voltmeter between the CPT anode terminal (anode cap) and ground as shown in Figure 1.
2. Turn off TV and connect jig as shown in Figure 2. Adjust jig fully counter-clockwise for minimum resistance.
3. Set the AC input to 120V AC and turn on TV.
4. Confirm test pattern on CPT is a usable picture, then slowly adjust jig until the picture disappears and TV shuts down.
5. When the limiter circuit is operating properly, High voltage will be less than Δ kV at \square mA when TV shuts down.

	13VR3B	20VR4B
A (kV)	29	31
B (mA)	0.7	0.85

6. Turn off set immediately after checking circuit operation.
7. Unplug set for one minute to reset shutdown circuit. Remove jig and voltmeter.

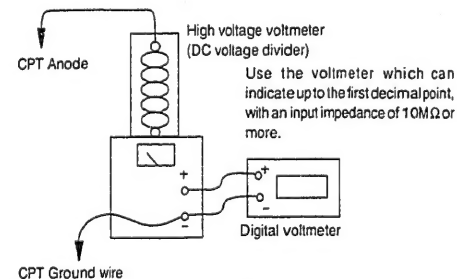


Fig. 1

Disconnect the #① pin of IP51 from +B line.
Connect jig (20kΩ VR) between +B line and #① pin of IP51.

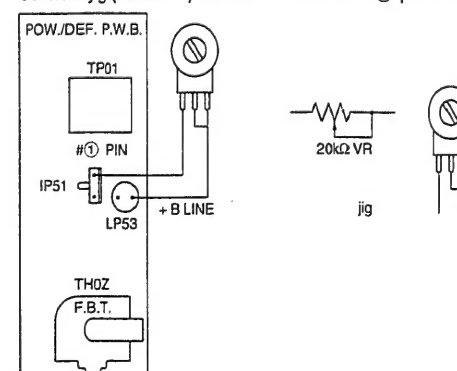
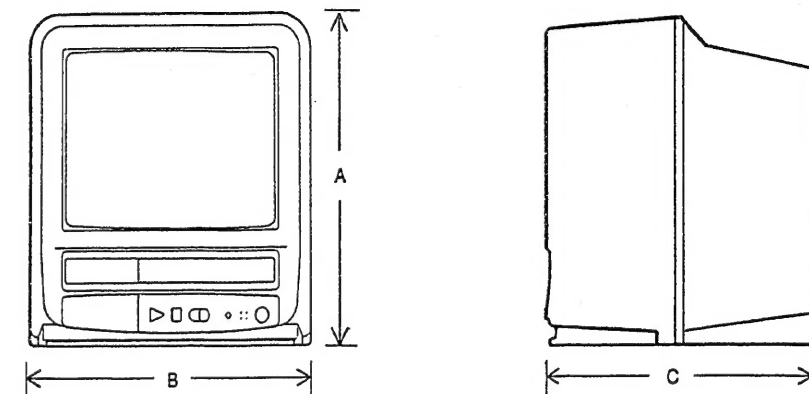


Fig. 2

GENERAL INFORMATION

Dimension

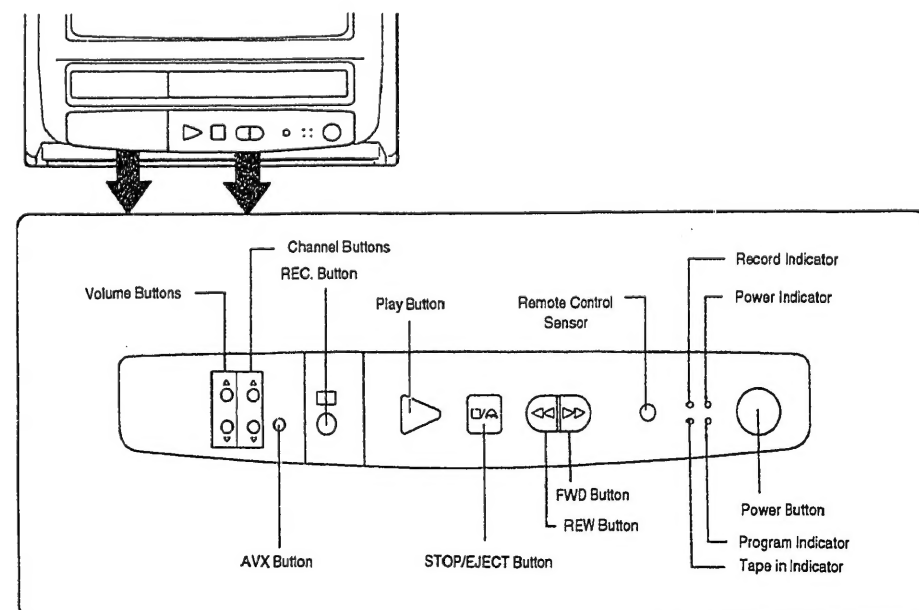


DIMENSION	A (in.)	B (in.)	C (in.)
MODEL			
13VR3B	15 9/18	15 9/18	14 3/4
20VR4B	19 7/8	20 1/2	18 5/16

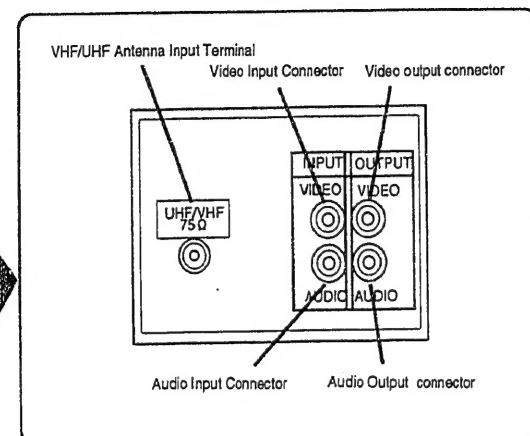
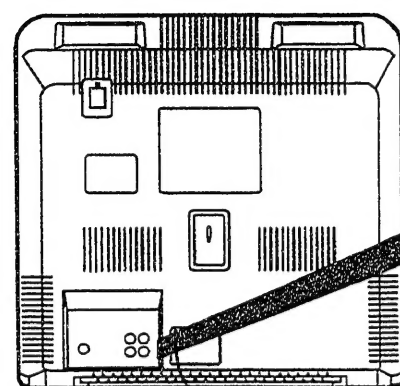
Description of Controls

TV

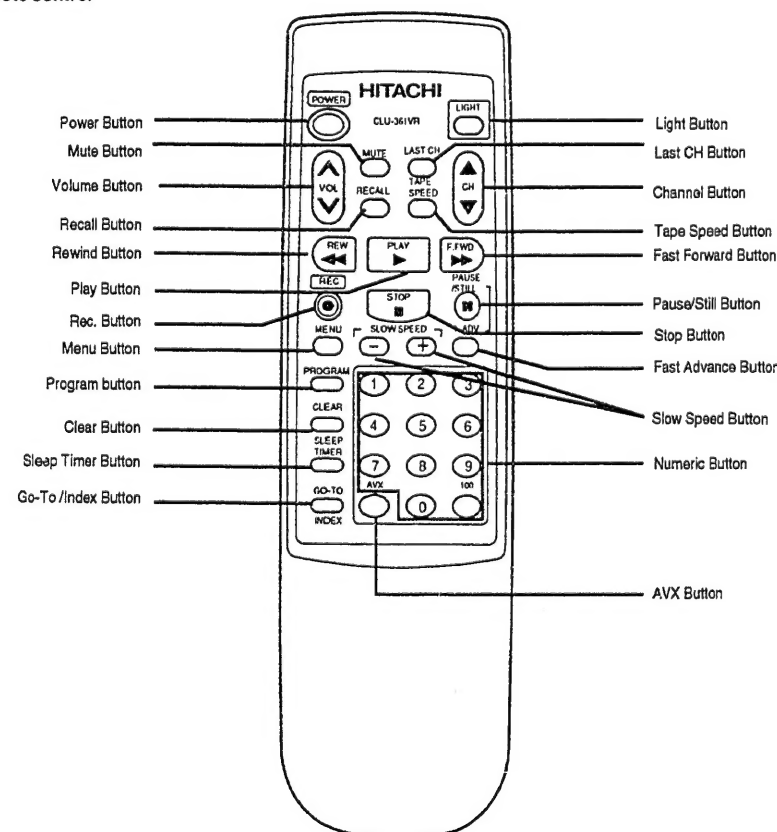
Front



Rear



Remote control



NEW ADOPTION CIRCUIT EXPLANATION

1. Power Supply Circuit

(1) Construction

GTV's Power Supply Circuit supplies the deflection, sound, signal, and VTR with 1 power supply.

(2) Operating Circuit

When AC power is applied, voltage flows from RP05/ RP06 to IP01 pin ⑨ and the switching circuit starts to operate. When S731 and the remote control is turned on, IP901 pin ⑤ goes H. This turns on SP01 and SP51 and supplies power to the magnetic degaussing circuit and the deflection circuit.

When main power supply and Remote control is turned off, VTR is not operating, IC901 pin ⑥ changes to L and QP56/ IP52 are turned off and thus produce the Low Electricity Consumption.

(3) Constant Voltage Operation

When TV is in operation +B voltage (DP53 output) error is detected at IP51 pin ① and the error signal is transmitted from uncharged area to charged area by IP03. Then pulse width is controlled by the return of signal to IP01 pin ⑦.

When in remote control standby mode or VTR preprogrammed recording mode, relay SP51 and +B voltage are turned off.

This time, 10V output error of DP55 is detected at QP53, DP60 and 10V is stabilized by returning of signal from IP01 in the same way.

Switching frequency changes from 45kHz of heavy load when TV is in operation to 130kHz with remote control in stand-by mode.

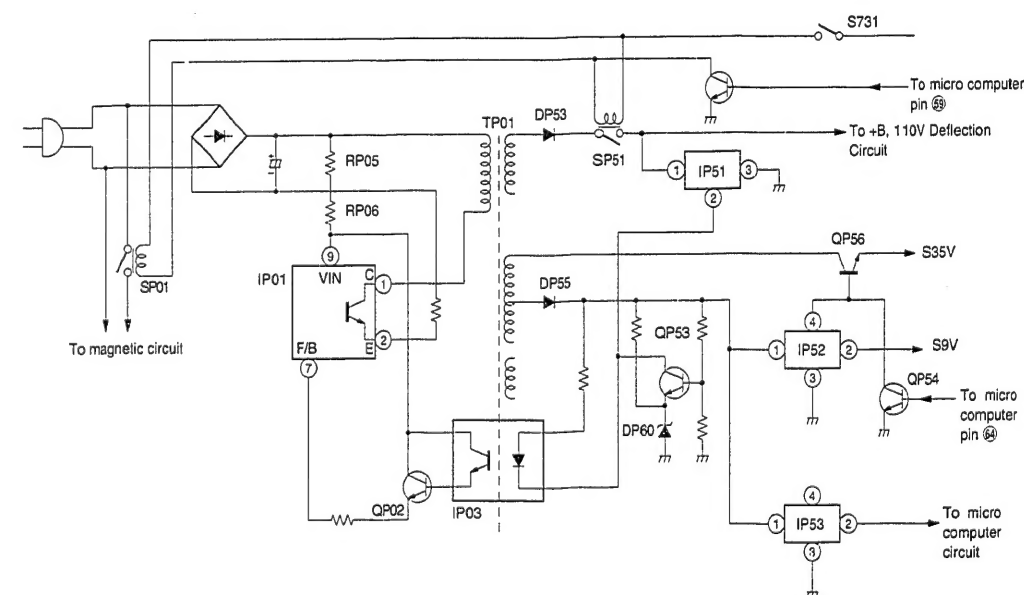
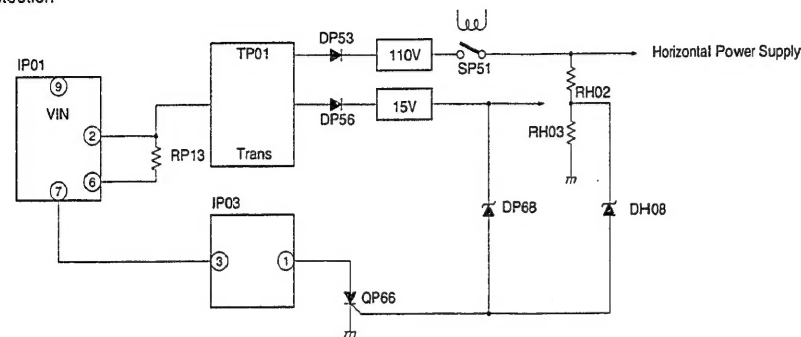


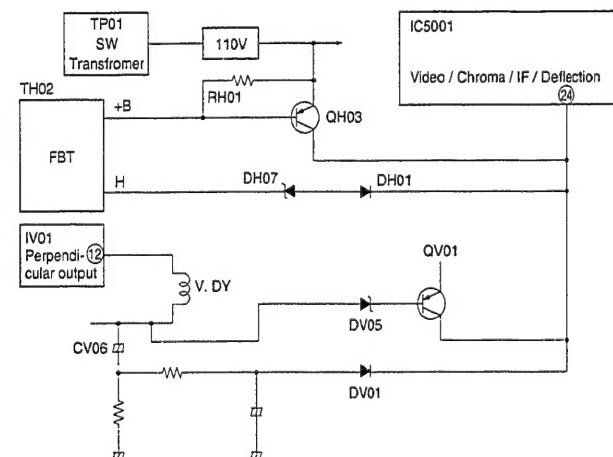
Fig. 1 Power Supply Circuit Composed Diagram

2. Protection Operating Circuit

(1) Power Supply Protection



(2) X-ray Protection



(3) Protection Circuit

Item	Protection Item	Symbol No.	Protecting Operation
(1)	15V voltage flow	DP68	15V voltage → DP68 ON → QP66 ON → IP03 ① voltage → IP03 ③ voltage → IP01 ⑦ voltage → IP01 SW-Tr ON time increase → TP01 voltage → IP01 ⑨ voltage → IP01 Internal Excessive Voltage protection turns IP01 OFF → IP01 STOP
(2)	Current flow	RP13	IP01 (Internal) SW-Tr (Current Flow) → RP13 Voltage Drop → IP01 Internal Current Flow Protection Operating System → IP01 STOP
(3)	+B Voltage Flow	DH08	+B (110V) voltage → DH08 ON → QP66 ON → afterwards, same as item 1.
(4)	High Voltage Limit	DH07	FBT (H) voltage → DH07, DH01 ON → IC5001 ② voltage → X-ray Protection Operating System
(5)	IV01 Short Output	DV05	IV01 ② voltage → DV05 ON → QV01 ON → IC5001 ② voltage → X-ray Protection Operating System
(6)	CV06 Short	DV01	CV06 short → DV01 ON → IC5001 ② voltage → X-ray Protection Operating System
(7)	FBT Protection	RH01 QH03	FBT strange → +110V current flow → RH01 voltage drop → QH03 ON → IC5001 ② voltage → X-ray Protection Operating System

Sometimes there are some mistakes when operating the Power Supply Protection Circuit. After servicing please press the SM04 on the PCB and reset the microcomputer.

SERVICING POSITIONS

1. Servicing Position For Electrical Adjustment

To adjust this part, remove VCR part from TV, with the removed shield cover from the bottom.

- 1) Remove VCR part from TV.
- 2) Remove 4 screws and remove shield cover.

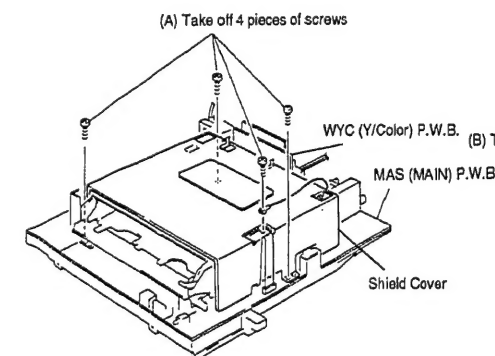


Fig. 1

2. Setting the servicing position

This VCR has a structure that part of the main circuit board is invisible under the loading mechanism block. When servicing, set the VCR to the following servicing positions according to the positions to be checked.

2-1. Procedures to check the main IC system microcomputer.

- 1) Remove VCR part from TV.
- 2) Check the pins of the main IC through the hole in the frame.

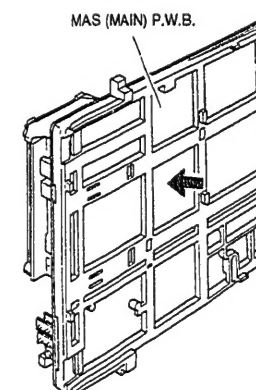


Fig. 2

2-2. Procedures to confirm the backside of mechanism block operation

Caution: The playback FM signal cannot be checked with this servicing position.

- 1) Remove VCR part from TV.
- 2) Remove 2 screws A and remove PLA (Preamp and audio) board.
- 3) Remove 4 screws B and lift up Mechanism block.

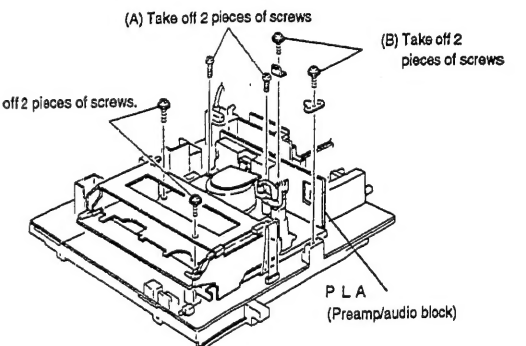


Fig. 3

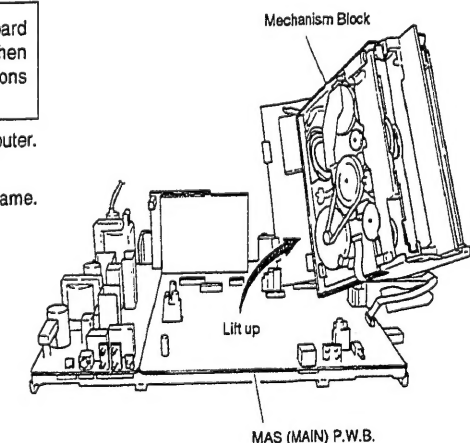


Fig. 4

2-3. Procedures to check the signal line while operating the mechanism

Setting Procedure (Fig. 6)

- 1) From television remove VCR parts.
- 2) Remove 4 screws, mechanism block and PLA Board and bring upside direction together.
- 3) Connect the 18-pin extension cable to the direct connectors between PLA and MAS circuit boards.
- 4) Connect the 8-pin connector between the cylinder motor and MAS circuit boards.
- 5) Connect the 7-pin connector between the capstan motor and MAS circuit boards.

Jig to be used (Fig. 5)

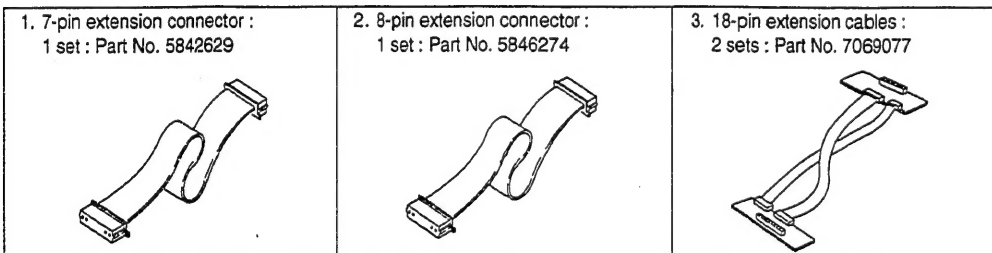


Fig. 5

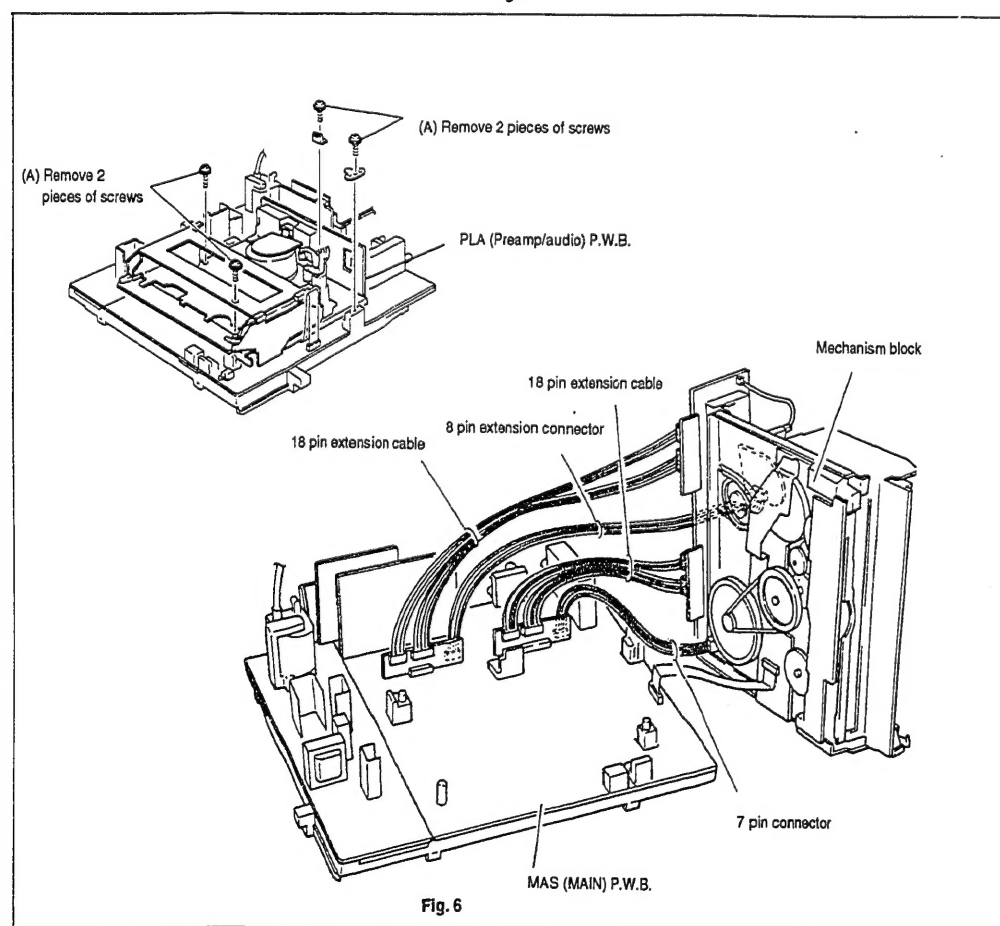


Fig. 6

ELECTRIC CIRCUIT ADJUSTMENT

Test equipment and tapes necessary for adjustment

- 1) Dual - trace oscilloscope
- 2) Color bar generator
- 3) Monitor TV (with AV jacks)
- 4) Alignment tapes
 - MH - 1 : Parts No. 7099046
 - 30HMP2-1 : Parts No. 7099089
- 5) Blank tape
- 6) Vector Scope

Cautions on adjustments

- 1) If there are no special instructions, the following conditions apply.
 - Oscilloscope probe: 10:1
 - Oscilloscope synchronization: Internal sync
 - Ground of test equipment: TP603 (GND) on Main P.C.B.
- 2) When making more than one adjustment, perform the adjustments in the order as listed.

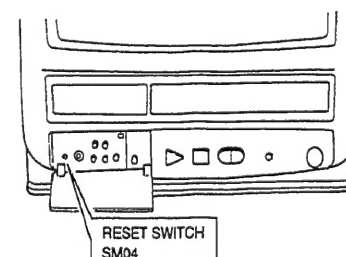


Fig. 1

Usable servicing methods

1. To reset the main microprocessor

The main microprocessors used in this unit can be reset by pressing switch (SM04) on the circuit board.

2. Connection of test equipments

Please refer to Fig. 2 for connection unless otherwise indicated.

1. Connect color bar generator to video input terminal.

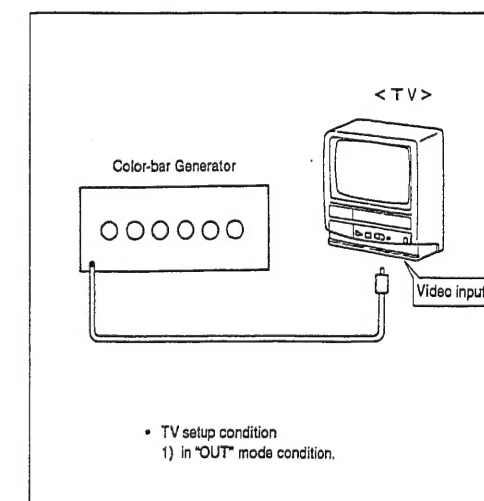


Fig. 2

Adjustment Parts Locations

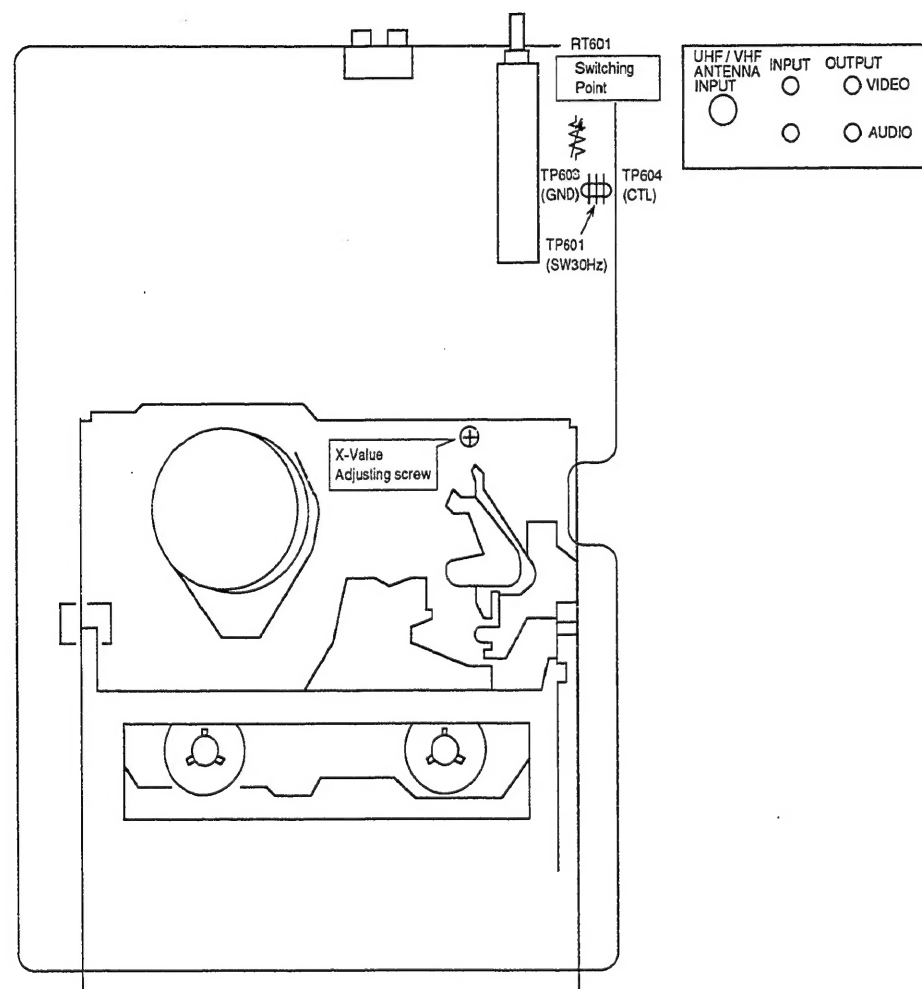


Fig. 3 Main Circuit Board (Component side)

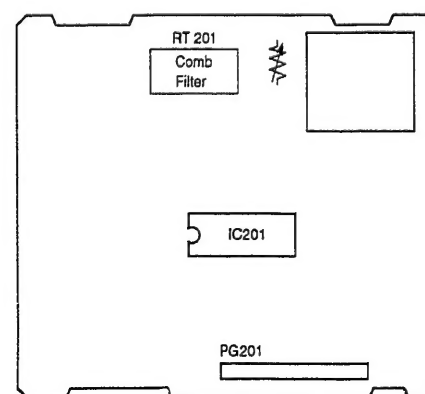


Fig. 4 WYC Circuit Board (Component side)

1. Servo circuit adjustment

1.1 Head Switching Point Adjustment

Purpose : To set the video head switching point during play to approximately the center where the CH-1 and CH-2 envelopes overlap each other.

Fault :

- The vertical sync signal is degraded and vertical jitter occurs.
- Switching noise appears across the bottom of the screen.

Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> Oscilloscope Alignment tape (30HMP2-1) 	<ul style="list-style-type: none"> CH-1 : VIDEO OUT CH-2 : TP601 (SW30Hz) 	Play alignment tape	RT601 (HEAD SWITCHING POINT)
Adjustment Procedure (Settings of oscilloscope) <ul style="list-style-type: none"> Trigger with CH-2. Set the sync slope to "-". 1) Vertical sync signal : Set to $6.5\text{H} \pm 0.5\text{H}$ from the trailing edge (trigger position) of the SW30Hz pulse.		Waveforms SW30Hz : (1V / div., 50 μs / div.) VIDEO OUT (0.5V / div.) TRIGGER POINT 6.5 \pm 0.5H VERTICAL SYNC	

1.2 X-Value adjustment

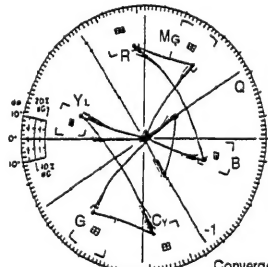
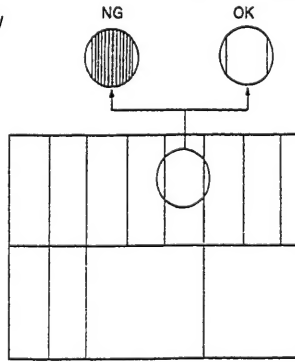
Purpose : To obtain compatibility with other VCRs.

Fault : Noise occur when a tape recorded by another VCR is played back because the tracking cannot be optimized.

Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> Oscilloscope Alignment tape (30HMP2-1) 	<ul style="list-style-type: none"> CH-1 : TP2501 (PBFM) CH-2 : TP601 (SW30Hz) 	1) Turn the power off and set to the test mode by shorting TP602 to TP603 2) Play an alignment tape.	X-value adjustment screw. (HEAD SWITCHING POINT)
Adjustment Procedure <ol style="list-style-type: none"> Play the alignment tape. Press the channel \blacktriangle and \blacktriangledown buttons simultaneously to set the tracking to the center. Turn the X-value adjustment screw to maximize the FM output. [Checking in the autotracking mode] <ol style="list-style-type: none"> Change the connection points of the oscilloscope. <ul style="list-style-type: none"> CH-1 : Video output jack CH-2 : TP604 (CTL PULSE) Press the eject button to remove the cassette; reinsert the cassette, then play it to activate the autotracking function. Check that the time from the CTL pulse (positive pulse) to V.SYNC in the video signal is $(5.6\text{ ms} \pm 0.2\text{ ms})$. If the phase is drifted greatly, perform steps 1) - 3) again. 		Waveforms (200mV / div., 20 μs / div.) FM output maximum [Waveforms to be checked] VIDEO OUT (500mV / div., 2ms / div.) TP603 (500mV / div.) 5.6ms \pm 0.2ms Note : The pulse at TP604 (CTL) is locked and does not move even when the X-value adjustment screw is turned. Activate autotracking again and check the phase.	

2. Video Circuit Adjustment

2.1 Comb Filter Adjustment

Purpose : To determine the characteristics of the playback comb filter.		Fault : <ul style="list-style-type: none"> • Cross color appears in the playback picture. • The S/N of the playback picture deteriorates. 	
Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Point
<ul style="list-style-type: none"> • Color bar generator • Vectorscope • Monitor TV • Blank tape 	<ul style="list-style-type: none"> • VIDEO INPUT JACK • VIDEO OUTPUT JACK • VIDEO OUTPUT JACK 	<ul style="list-style-type: none"> • Set RT201 to its center position, record a color bar signal in the EP mode and play it back using the same VCR. 	<ul style="list-style-type: none"> • RT201 [WYC board]
Adjustment Procedure [Adjustment using a vectorscope] 1) Adjust RT201 so the bright points of each color are converged as shown on the right.		Vectorscope 	
[Adjustment using a monitor TV] Caution : Use a TV with the screen of 21 inches or more for this adjustment. 1) Adjust RT201 so that the vertical stripes in the color bars on the monitor TV are not seen, as shown on the right.		Monitor TV 	

3. VCR Presetting

- 1) Press the "Record" button. At the same time, press the "Reset" button for 1 second. Then, release the "Reset" button followed by the "Record" button.


Caution


Remove the cassette before carrying out the above procedure to prevent any accidental recording.

- 2) The items listed below will be initialised by the above procedure, and will have to be reset.

Menu Display

- Menu -

Set up  1

Picture  2

Select Number

Exit  menu

INSPECTION METHOD BY TROUBLE INDICATION SYSTEM

This product features a trouble indication system. The tape-in LED indicates trouble with mechanism to help you find causes of power shutdown or mechanism malfunctions. The main μ p (IC901) detects defective mechanism controls and indicates defect by blinking or strobing the tape-in LED a predetermined amount of times.

The defect information is contained in Table in Fig. 1. The number of blinks indicates the type of failure.

Trouble indication method.

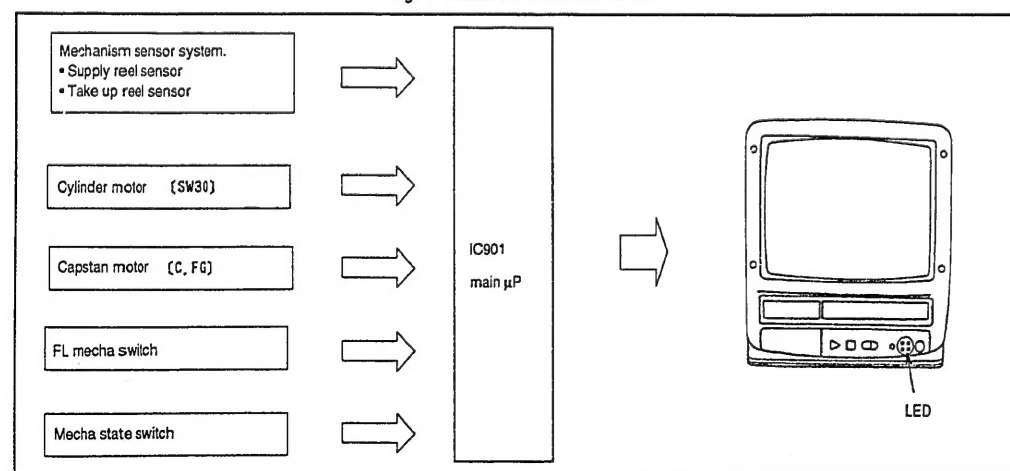
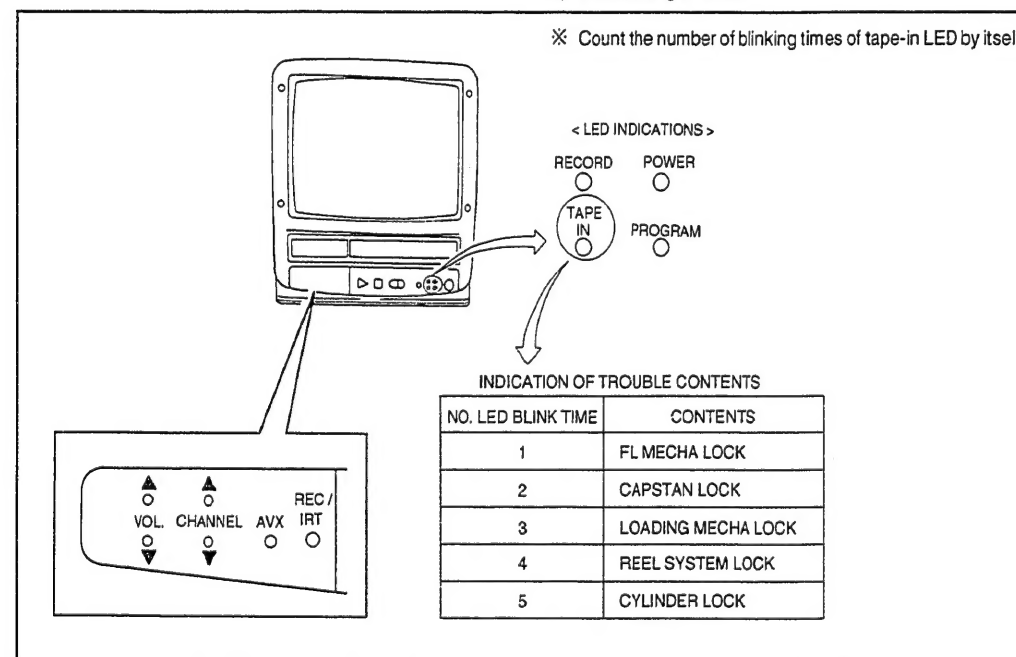
Press "Ch \blacktriangledown " button on the set when the power is off and the tape-in LED will blink. The number of blinks shows the nature of failure.

How to clear trouble information.

The trouble information will be cleared by performing the following procedure.

a) Initial setting of VCR.

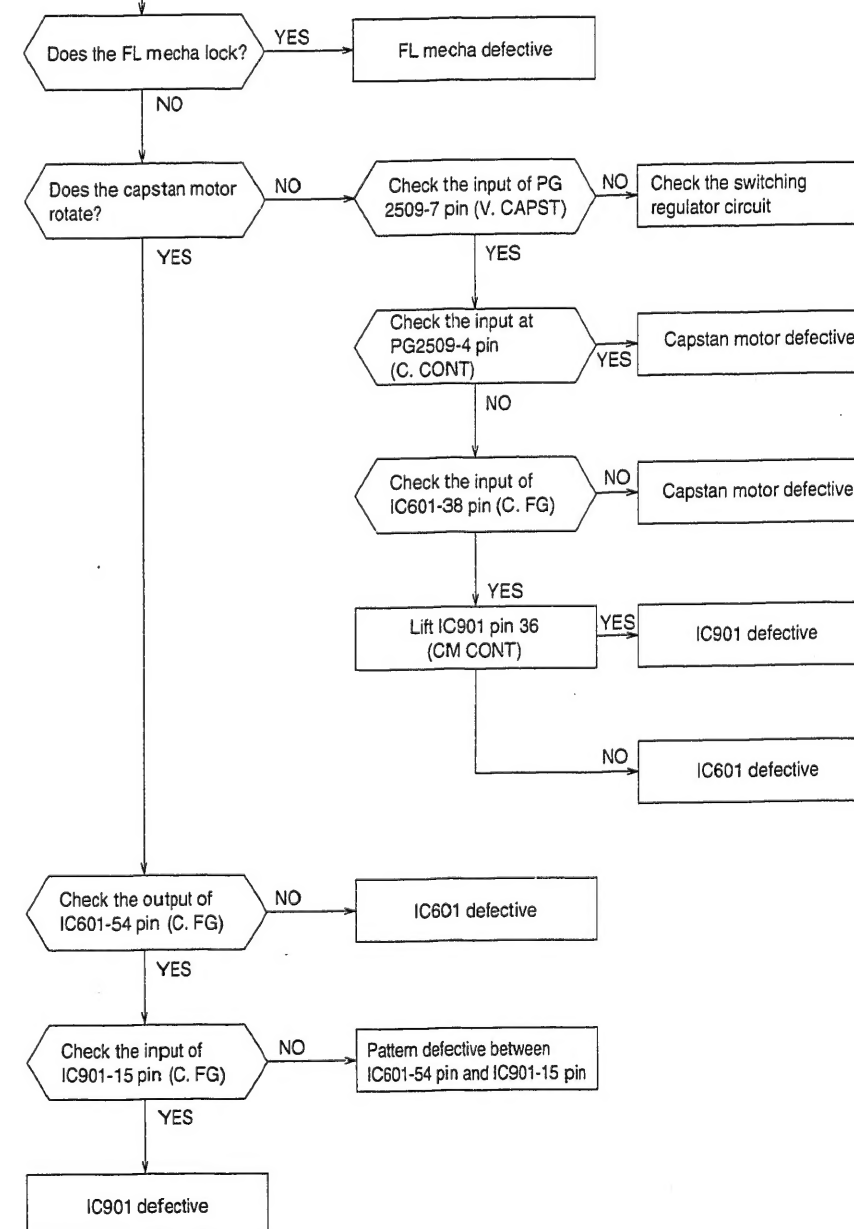
※ Count the number of blinking times of tape-in LED by itself.



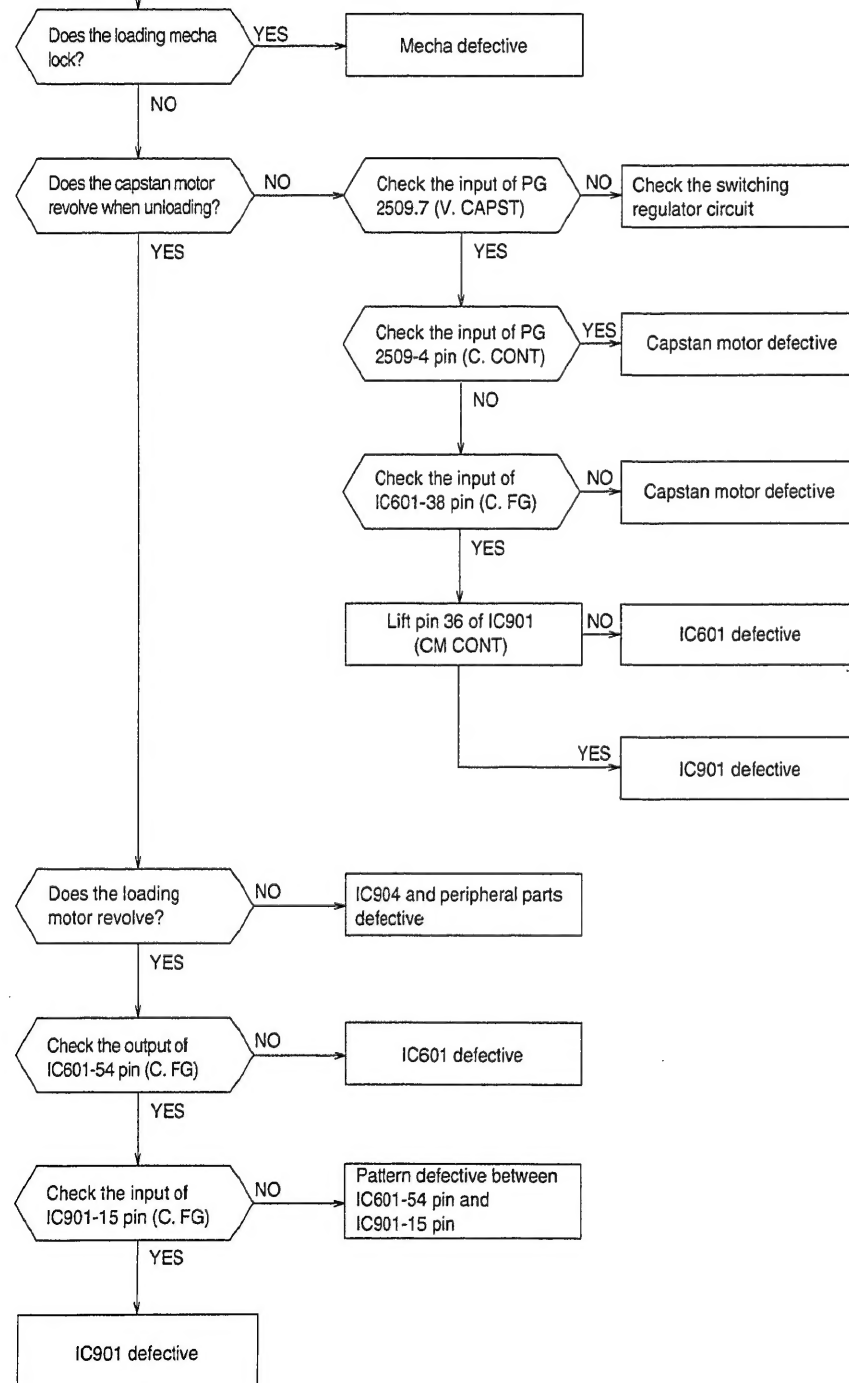
Trouble Indication Check Procedure

Follow this flowchart when a defect is indicated by trouble indication feature.

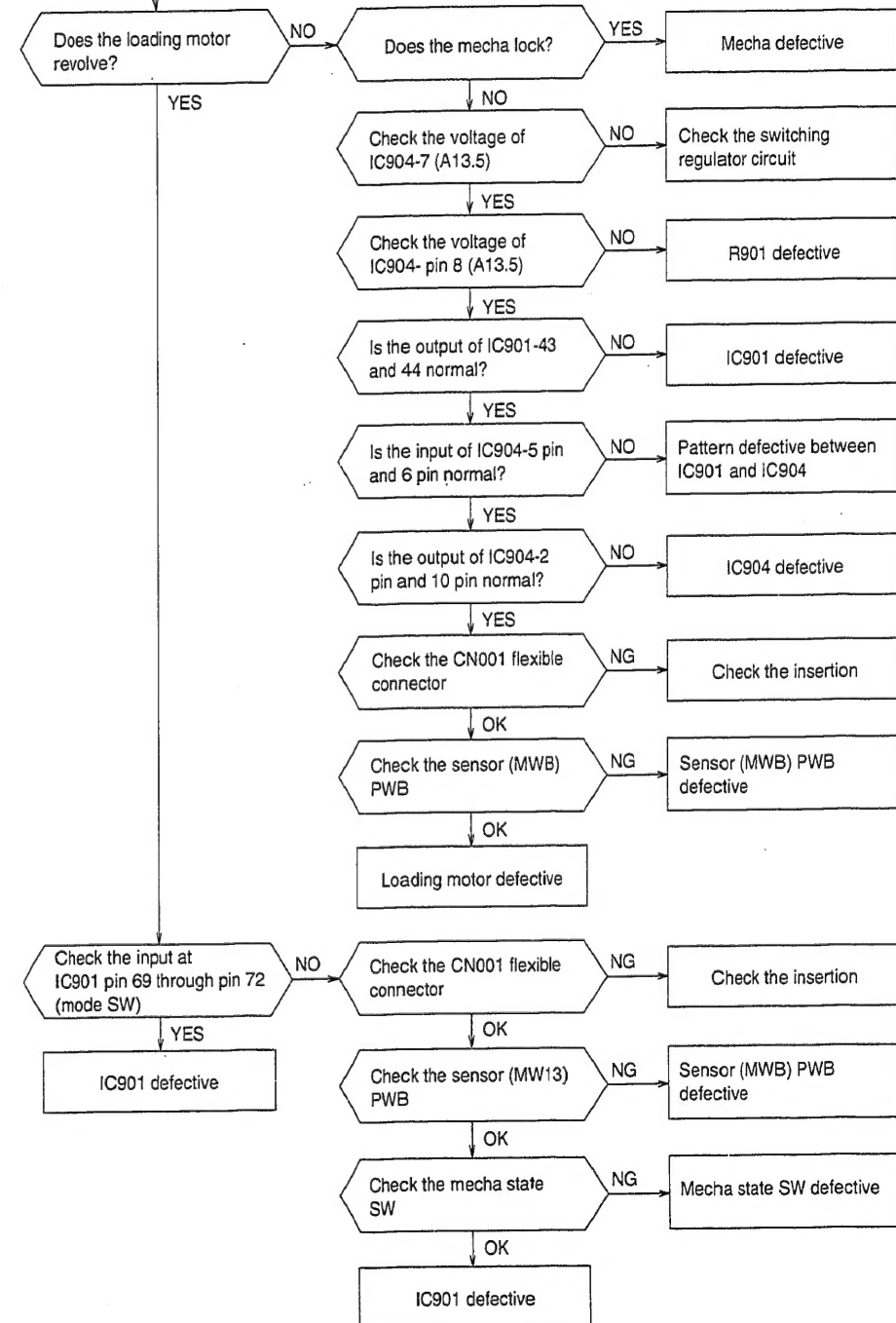
When LED blinks once



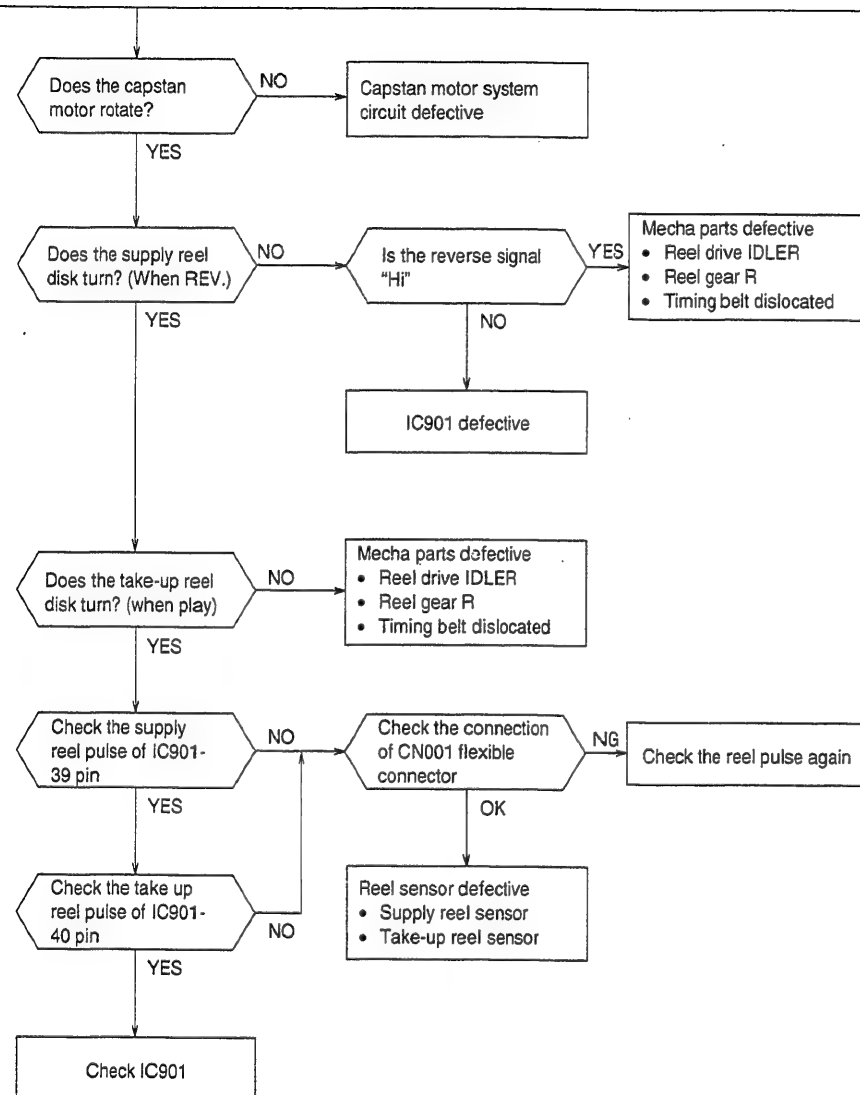
When LED blinks twice



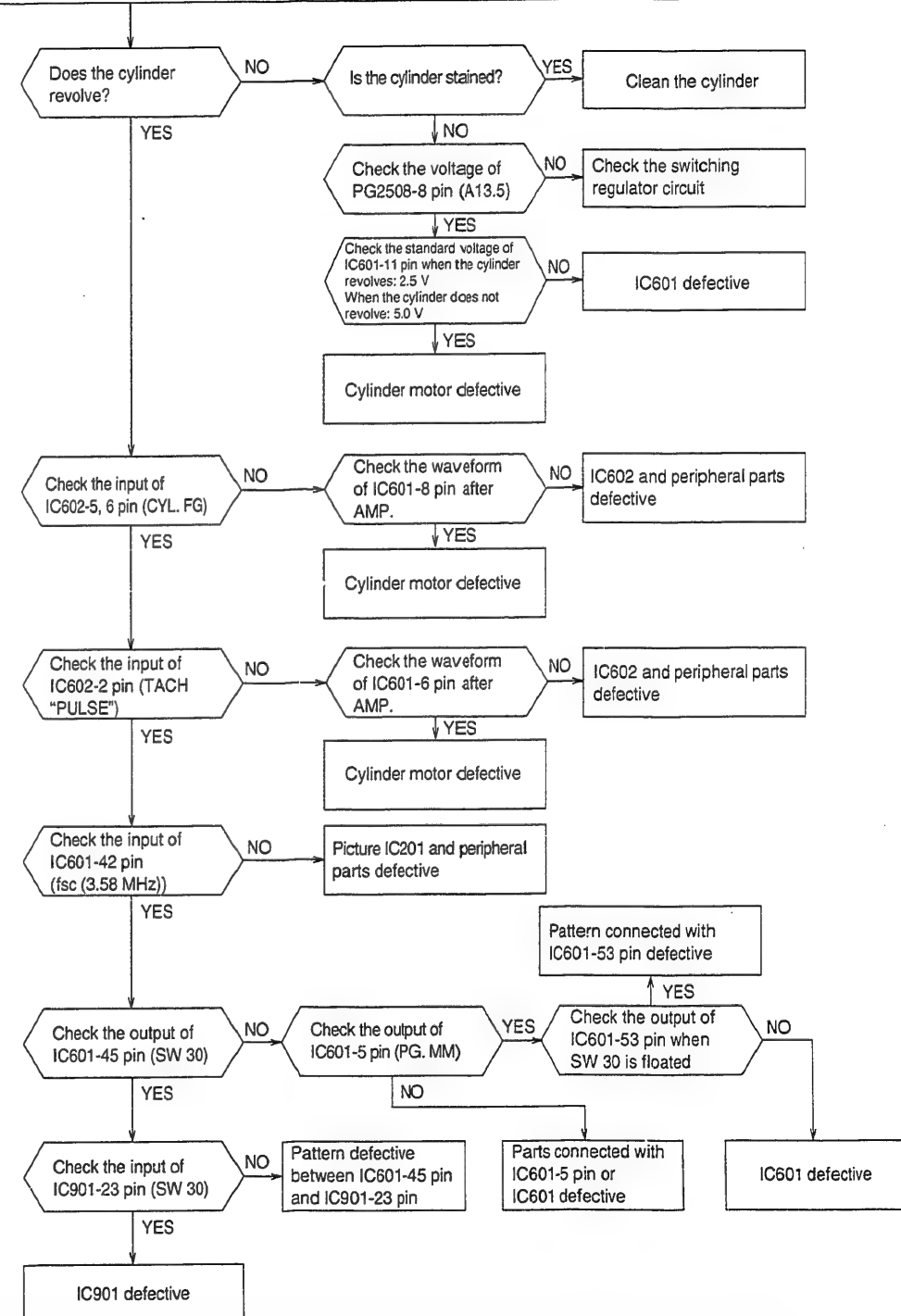
When LED blinks three times



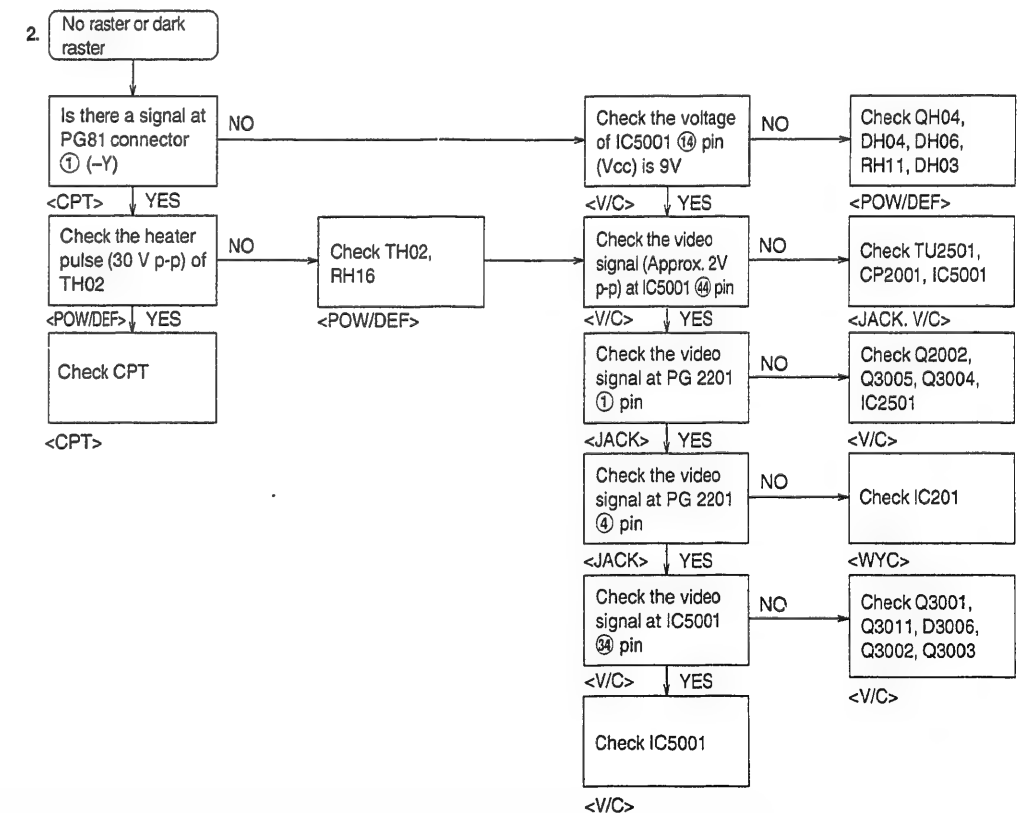
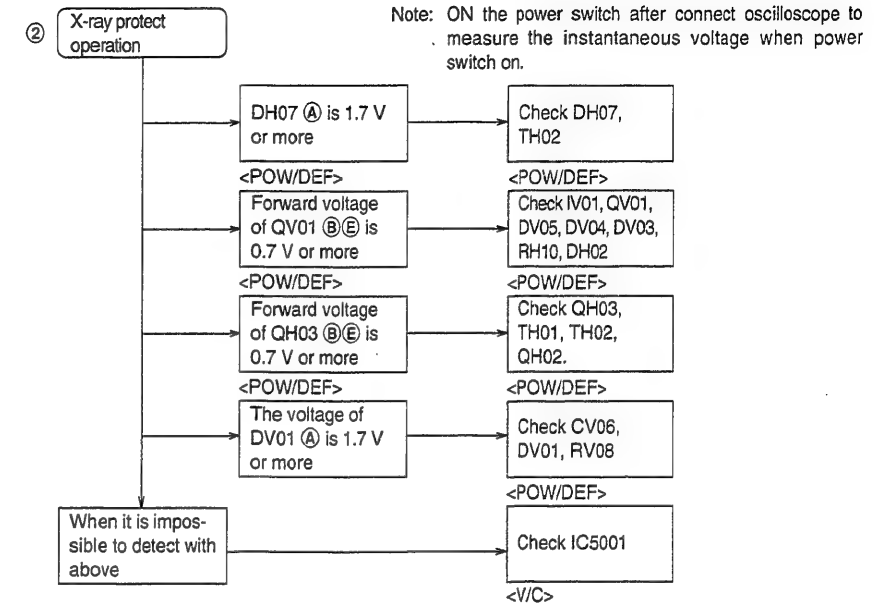
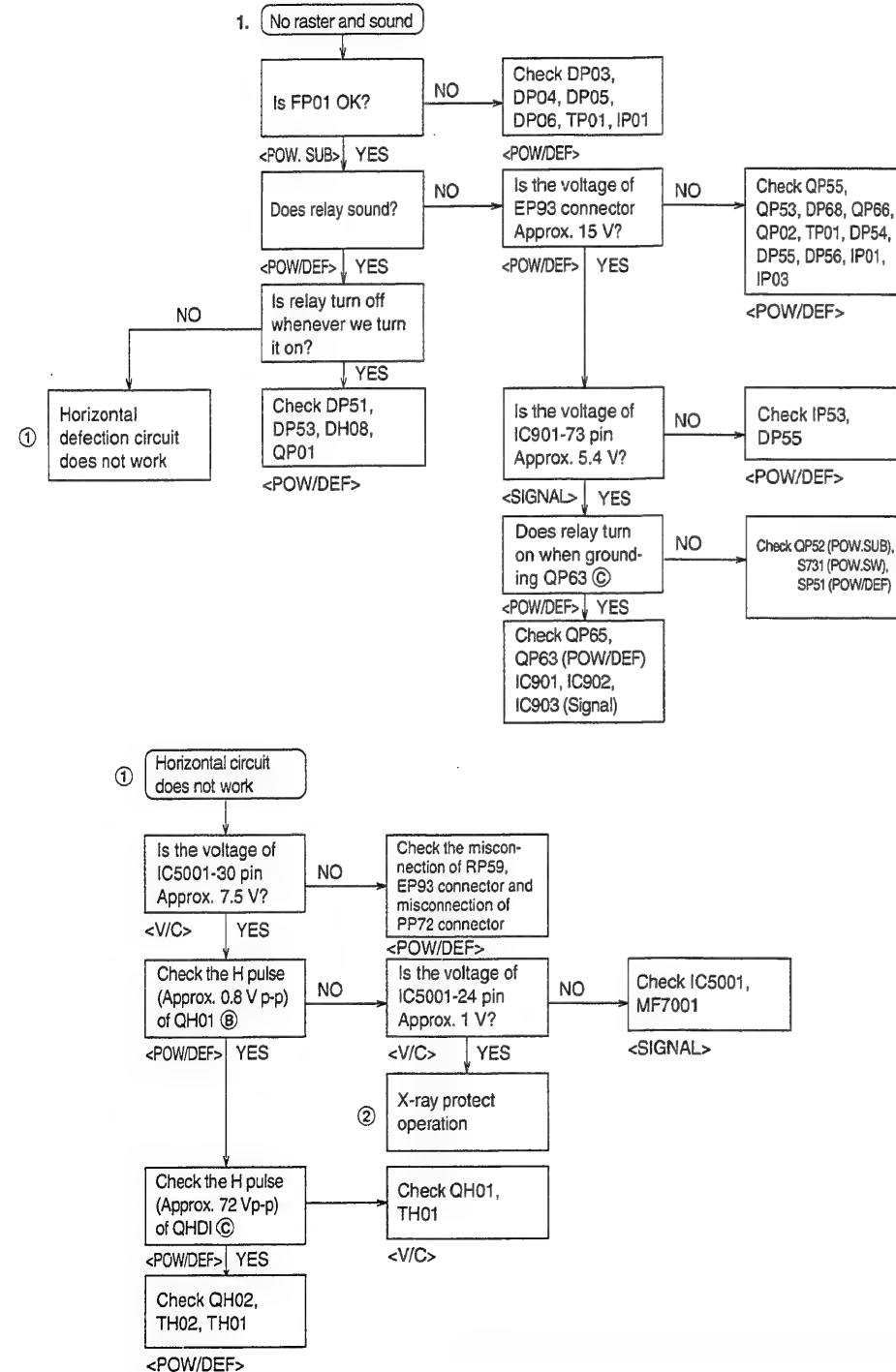
When LED blinks four times

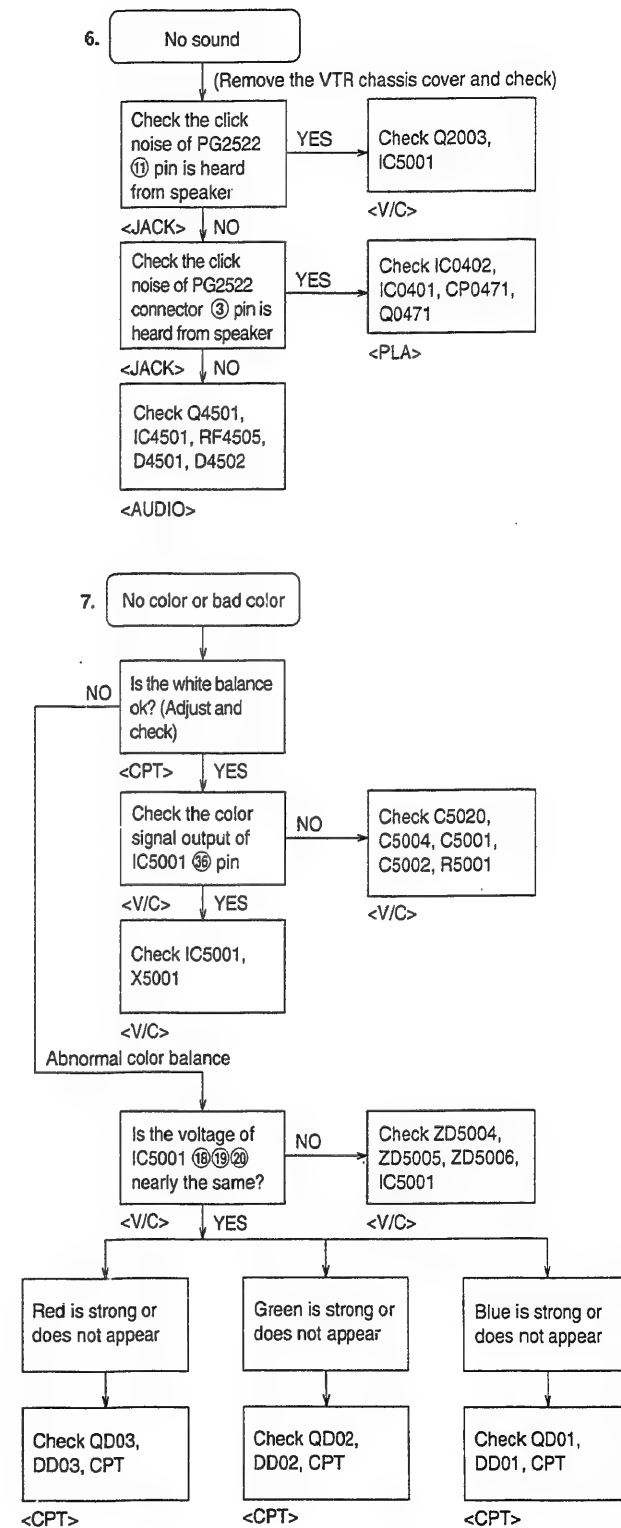
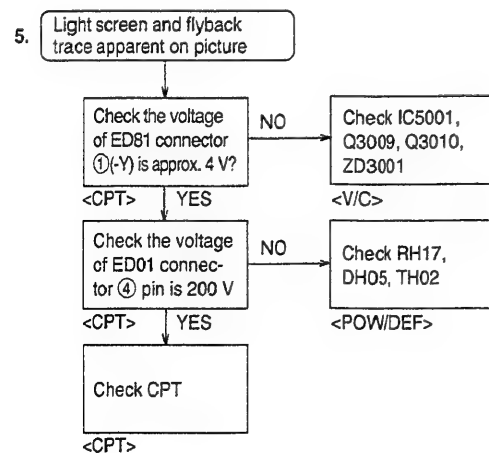
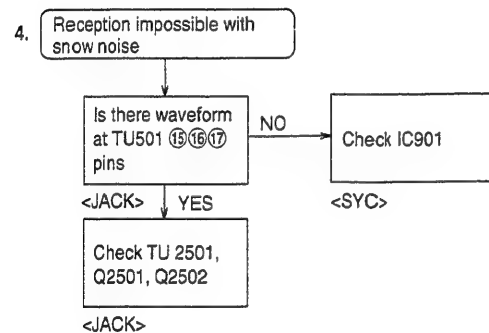
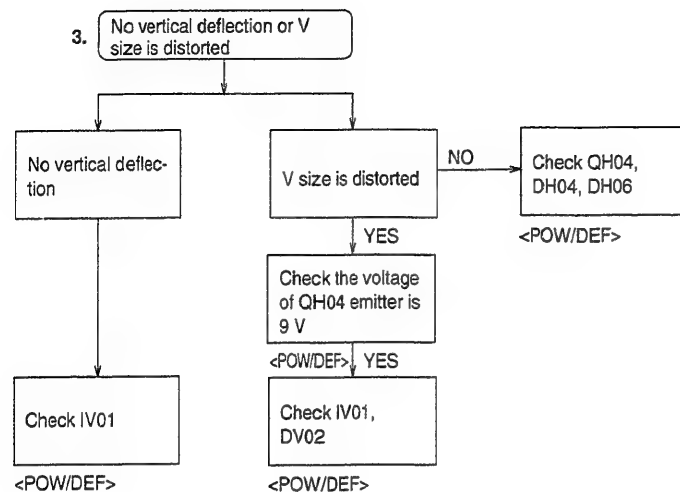


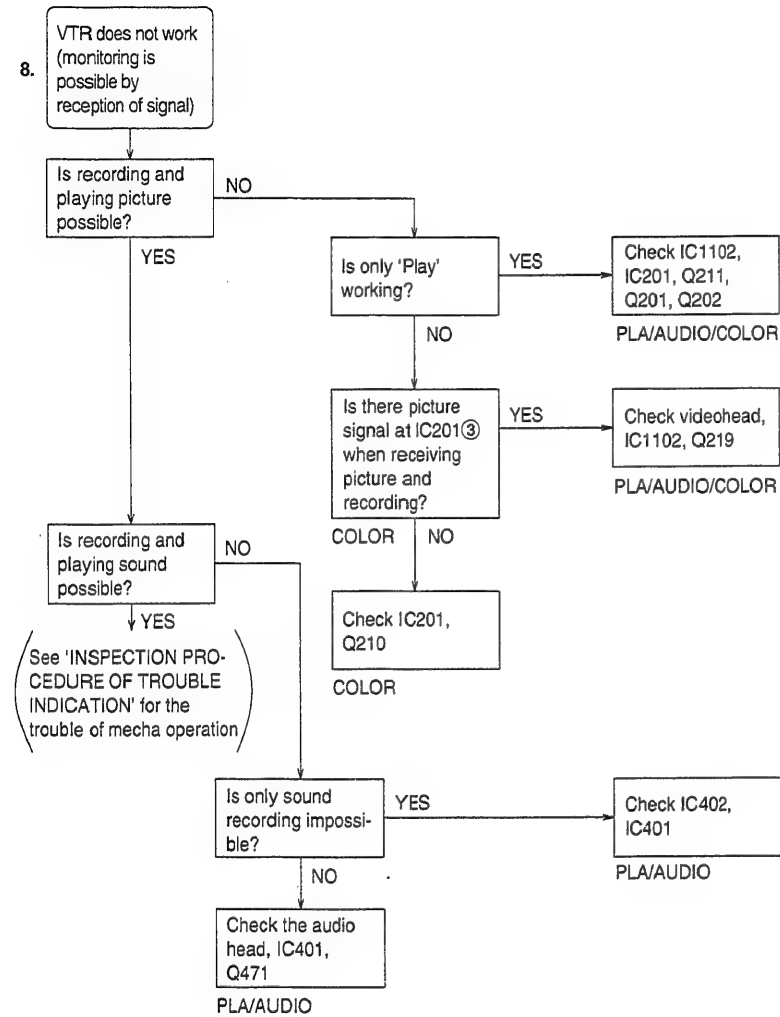
When LED blinks five times



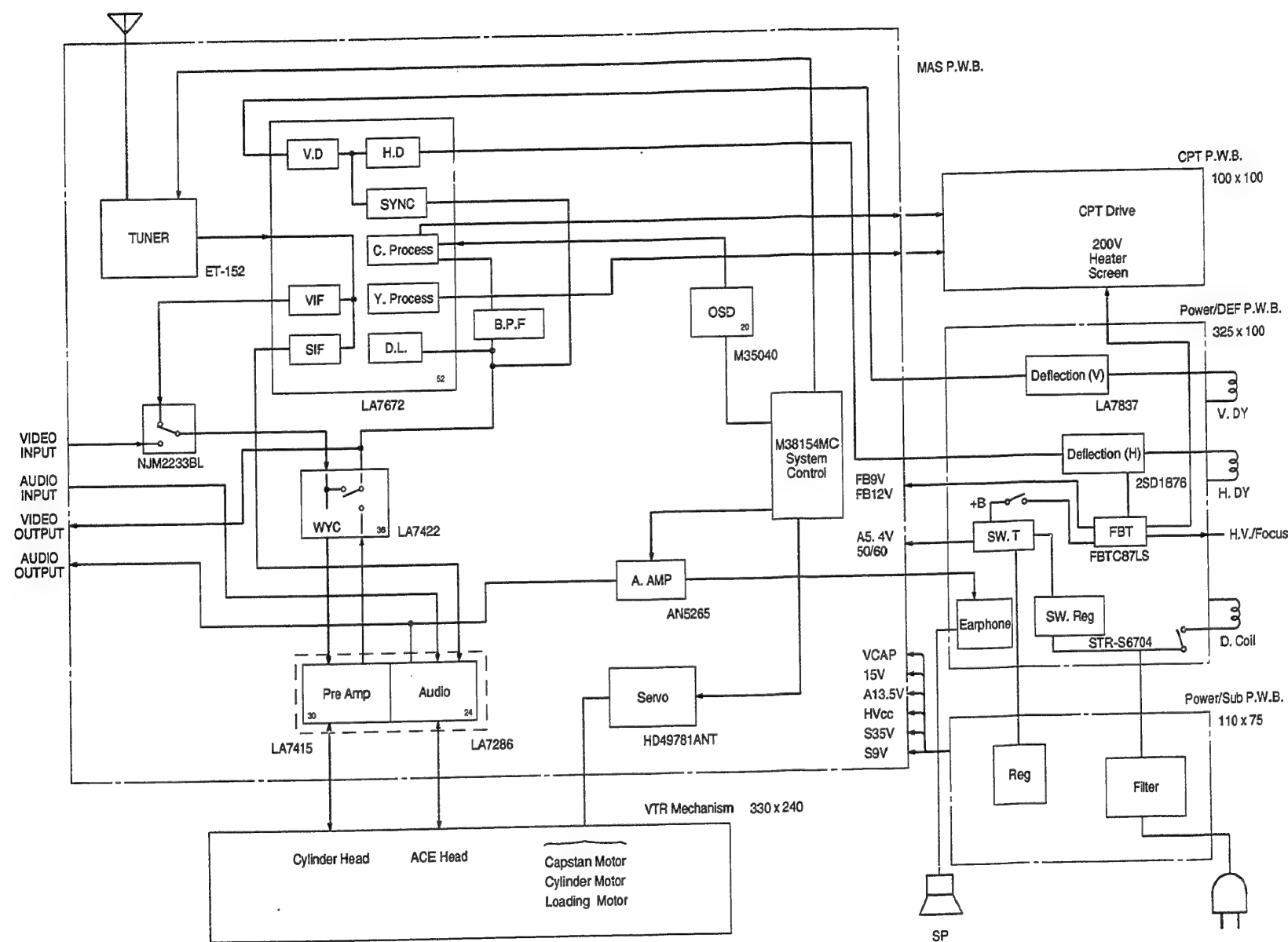
TROUBLE SHOOTING



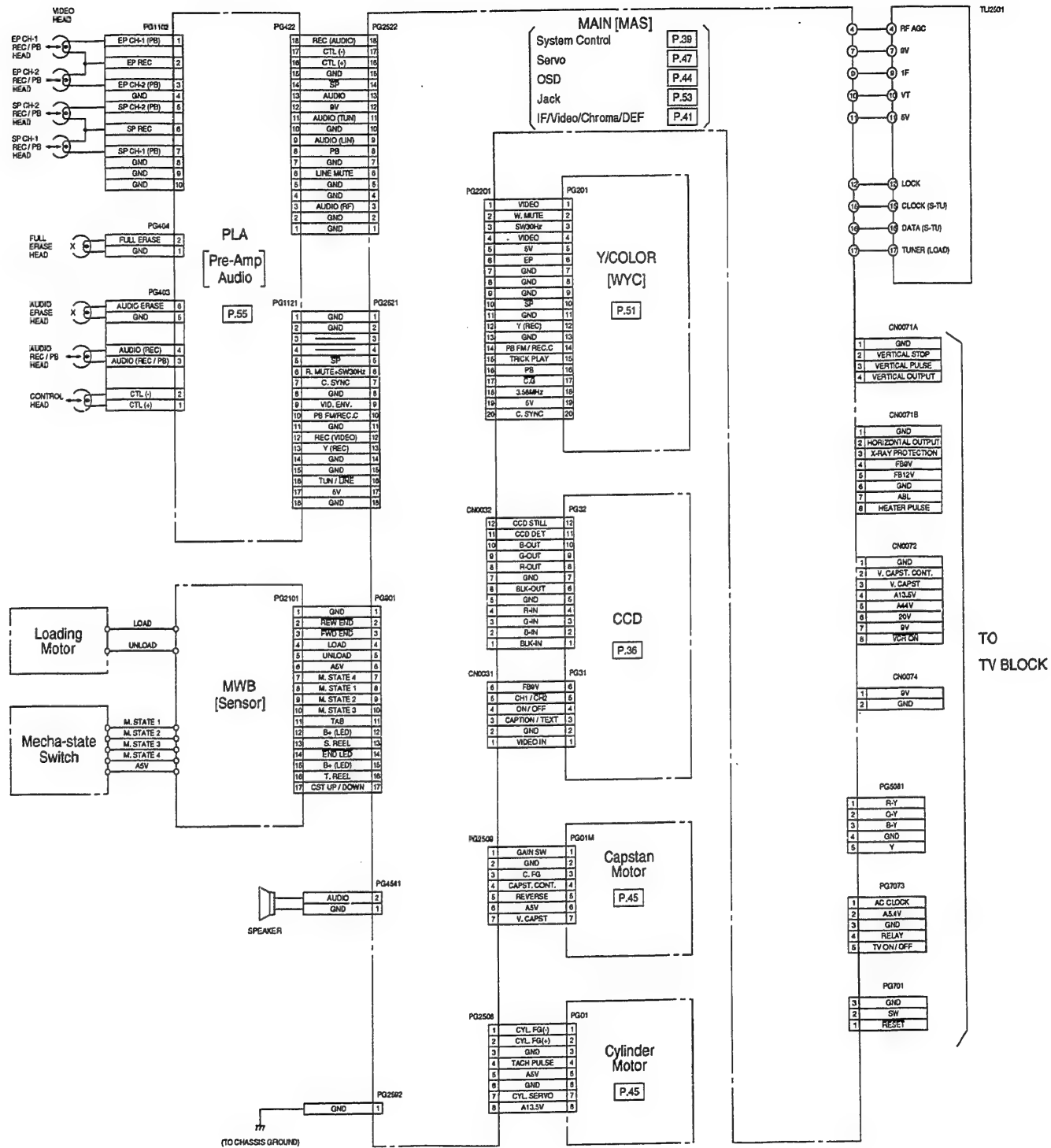




BLOCK DIAGRAM



WIRING DIAGRAM



BASIC CIRCUIT DIAGRAM

Microprocessor Pin Function Table

Main μ P (IC901) Pin Functions

Pin No.	I/O	Active level	Abbreviation	Functions
1 2	O O	L L	L OUT 1 L OUT 2	Lo is used for output. (Use at the end of the terminal).
3	I	A/D	S-CURVE	Detects the variation of the AFT (S. CURVE) voltage applied from the IF unit to tune the station correctly.
4	I	H	CCD DET	CC (Close caption) signal detection. H: CC signal Appear L: CC No signal.
5 12	I/O O	Pulse Pulse	I ² C DATA I ² C CLOCK	This is a common data bus lines between SYSTEM CONTROL μ P and ROM IC. The DATA is sent with clock signal.
6 7	O O	Pulse Pulse	CLOCK (S-SRV) DATA (S-SRV)	These are the data bus lines between SYSTEM CONTROL μ P and SERVO IC. The DATA is sent to SERVO IC with clock signal.
8 9	I I	L L	FWD END RED END	Releases the instrument from the commanded mode when "Lo" pulse is applied from the end sensor on the mechanism. Each sensor is responsible for monitoring the ends of tape. In addition both end sensors are also responsible for monitoring that no cassette is present.
10 11	O O	Pulse Pulse	S. CLOCK S. DATA	This is a common data lines between SYSTEM CONTROL μ P and OSD/PLL/AUD. IC. The data is sent with CLOCK signal.
13	O	H/L	CHROMA 30Hz	CHROMA ROTATION output. H: CH-1, L: CH-2
14	O	H/L	SP	The signal used to change the head. H: EP, L: SP
15	I	Pulse	C.FG DIV.	Monitors whether or not the slack is rewound to the supply reel disk during eject. The C. FG pulses are also utilized as clock signal to measure the amount of the backspace during record-pause.
16	I	Pulse Pulse	CTL (COUNT) (LO) CTL (SLOW) (LO)	Inputs CTL DIV. pulses in order to calculate the linear time counter. Inputs CTL DIV. pulses in order to process the slow mode.
17	O	PWM	AUD. VOL.	The output of PWM. To adjust the sound.
18	O	PWM	V. CAPST CONT.	Controls the B+ voltage of the capstan motor driver IC according to the VCR operation mode.
19	O	H	A. DUB MUTE/ TRICK PLAY	Controls the Mute record when A. DUB PAUSE. H: MUTE ON L: MUTE OFF. Controls the TRICK PLAY mode H: TRICK PLAY.
20	O	H/M/L	fH CORRECT	Horizontal jitter correction signal in slow mode. I; H/2; L for SP Mode, I; L/2; H for EP Mode, M (open) for other mode.
21 66 68	O O O	L H H	OSD LOAD AUD LOAD (NC) PLL LOAD	Selects the DATA reception IC. A common data line is provided between M- μ P and each IC. When sending the data μ P sets each LOAD terminal to H or L until the data transfer is completed.
22	I	H/L	HEAD COMPA.	To compare the head of output and input.
23	I	Pulse	SW 30Hz	Monitors the frequency of SW 30Hz to detect that the cylinder motor rotates correctly during record and play. The SW 30Hz signal is also used to control supplying the video signals to the heads. H: CH-2, L: CH1 for SP H: CH-1, L: CH2 for EP
24	I	L	SYNC DET	The input of the presence of SYNC's signal L: SYNC's signal appear.

Pin No.	I/O	Active level	Abbreviation	Functions
25	I	Pulse	AC CLOCK	Utilized as a clock pulse for time count and is also used to detect power failure.
26	I	Pulse	IR PULSE	Decodes the IR remote code from the IR transmitter and places the VCR in the commanded mode.
27	I	L	RESET	To initialize the power of μ P
28 29	I O	- -	OSC I (32kHz) OSC O (33kHz)	Generates a 32.768 kHz clock signal for the timer during backup mode.
30 31	I O	- -	OSC I (4MHz) OSC O (4MHz)	Generates a 4 MHz clock signal which is utilized as the main system clock signal in modes other than backup mode.
32	-	-	Vss	Connected to Ground.
33	O	H/L	PWM WR	To control the data received by TV P. CONT. IC (IC905) H: Able to receive the data.
34	O	H	REC (VIDEO)	Controls the REC 9V Power, sets the video circuit to RECORD mode.
35	O	L	PWM LOAD	Selects the data reception IC. A common data line is provided between M- μ P and each IC. When sending the data μ P sets each LOAD terminal to H or L until the data transfer is completed.
36	O	H/M/L	CM. MODE	Selects the capstan motor operation mode. "Hi": REEL mode, "Mi": SERVO mode, "Lo": BRAKE mode. During "Hi", this controls the capstan motor instead of the SERVO IC output in other than PB/REC/SEARCH modes.
37	O	H/L H/O	HiFi REC MUTE/ SP SRCH	To mute the record current of the HiFi. H: Mute ON L: Mute OFF Controls the SP Mode Search. L: DA4 SEARCH M: NORMAL L: OTHER SEARCH EXCEPT DA4
38	I	L	DUTY	INDEX signal input. "Lo" when INDEX signal is detected.
39 40	I I	Pulse Pulse	S. REEL T. REEL	Monitor the both reel rotating frequency to detect the reel lock condition. These reel pulses also utilized for counting the tape remaining time.
41	O	H	REVERSE	Sets the capstan rotation direction to reverse.
42	O	H	REC MUTE	Inhibits supplying the video signal to the video head during transient period in recording mode.
43 44	O O	H H	UNLOAD LOAD	Controls the loading motor to place the mechanism state in mode corresponding to the commanded mode. Refer to the block diagram.
45	O	PWM	P. CONT	The output terminal of PWM to control the picture.
46	O	H/L	CG	The output terminal to control copyguard.
47	O	H/L	B. BLACK	The output terminal of B. Black Controller.
48	-	-	NC	
49	O	H/L	CAPTION/TXIT (NC)	CAPTION/TEXT selection
50	O	H/L	OFF/ON (NC)	ON/OFF selection
51	O	H/L	CH-1/CH-2 (NC)	CH-1/CH-2 SELECTION
52	O	H/L	CCD STILL (NC)	Indication control during still
53	-	-	NC	
54	-	-	NC	
55	O	H/L	DA4	Judges the function from the presence of diode.
56	O	H/L	CCD	Judges the function from the presence of diode.
57	-	-	NC	

Pin No.	I/O	Active level	Abbreviation	Functions
58	O	H/L	CLOCK FAST	Judge the function from the presence of diode.
59	O	H	TV ON	Hi output when the power supply is on.
60	O		TEST	Sets to X tracking mode.
61	O	H/L	TAPE. LED	LED Indication show the presence of the tape.
62	O	H/L	TIMER. LED	LED Indication show the presence of the program.
63	O	H	REC (AUDIO)	Set the Linear sound circuit to Record Mode.
64	O	H	VOR ON	Hi output when power supply is on.
65	I	H	M-SEL/TEST	Model Selection. Sets to Test Mode.
67	O	H/L	TUN/LINE	The output of TUNER/LINE selection. "Lo" output when LINE. "Hi" output when TUNER.
70	I	H/L	M. STATE 1	Detects the mechanism state position to control the loading motor.
71	I	H/L	M. STATE 2	
72	I	H/L	M. STATE 3	
69	I	H/L	M. STATE 4	
73	I	-	VCC	Connected to BU5V.
74	I	-	Vdisp.	Input of the pull down Resistance power supply.
75	-	-	Vss	Connected to ground.
76	I	-	AVREF	The reference voltage of the A/D converter. Connected to 5V.
77	I	A/D	KEY IN	Input key from the front panel switch.
78	I	A/D	TAB/CST. UP-DN	Detects whether or not the record prevention tab which is located on the cassette is removed. With no tab, recording is inhibited or cassette is ejected automatically when the timer recording is set. Detects the cassette holder switch with "Hi" and "Lo" level. Refer to the block diagram.
79	I	H/L	POWER ON	Input to detect main power supply ON/OFF.
80	I	A/D	ENVEL. (VIDEO)	Video Envelope level input for Auto tracking.

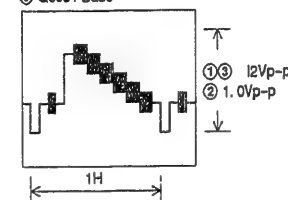
SERVO IC (IC601) Extension Port

Pin No.	I/O	Active level	Abbreviation	Functions
1	O	H/L	SP	Tape speed output L: SP, H: SP
2	O	H/L	EP	Tape speed output L: EP, H: EP
3	O	H/L	PB	Controls the circuit during play. L: E-E, H: PB
55		-	NC	

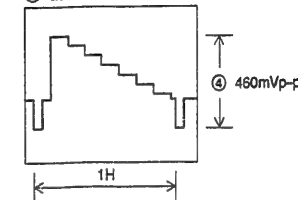
OSD IC (IC1401) Extension Port

Pin No.	I/O	Active level	Abbreviation	Functions
7	O	H/L	LINE MUTE	Controls LINE MUTE output L: MUTE OFF, H: MUTE ON
8	O	H/L	VIDEO MUTE	Controls VIDEO MUTE output L: MUTE OFF, H: MUTE ON

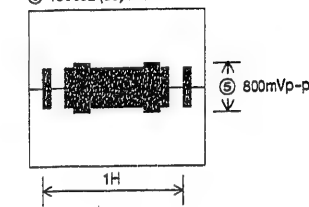
Wave Form (13VR3B/20VR4B)

① IC5001 (44) Pin, ② Q3004 Emitter
③ Q3001 Base

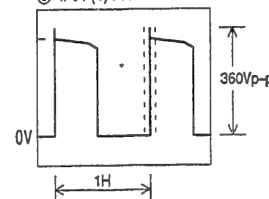
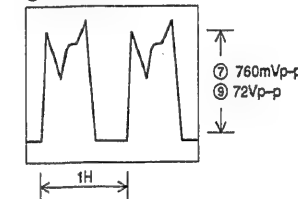
④ Q3003 Emitter



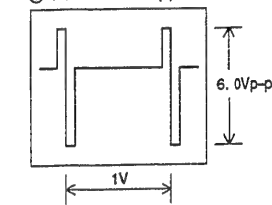
⑤ IC5002 (36) Pin



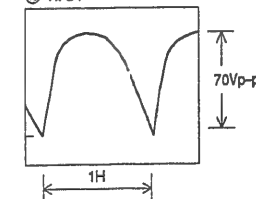
⑥ IP01 (1) Pin

⑦ PG71 Connector (6) Pin
⑧ QH01 Connector

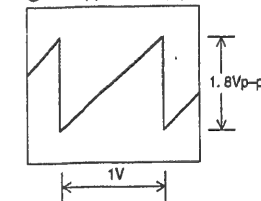
⑨ PG71 Connector (4) Pin



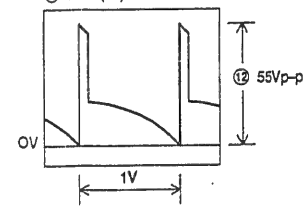
⑩ H. DY



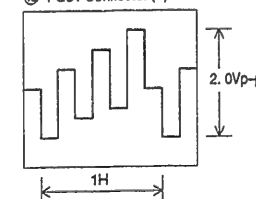
⑪ 1V01 (6) Pin 1.8Vp-p



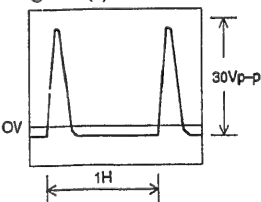
⑫ IV01 (12) Pin



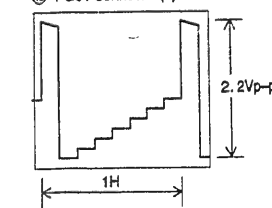
⑬ PG81 Connector (3) Pin



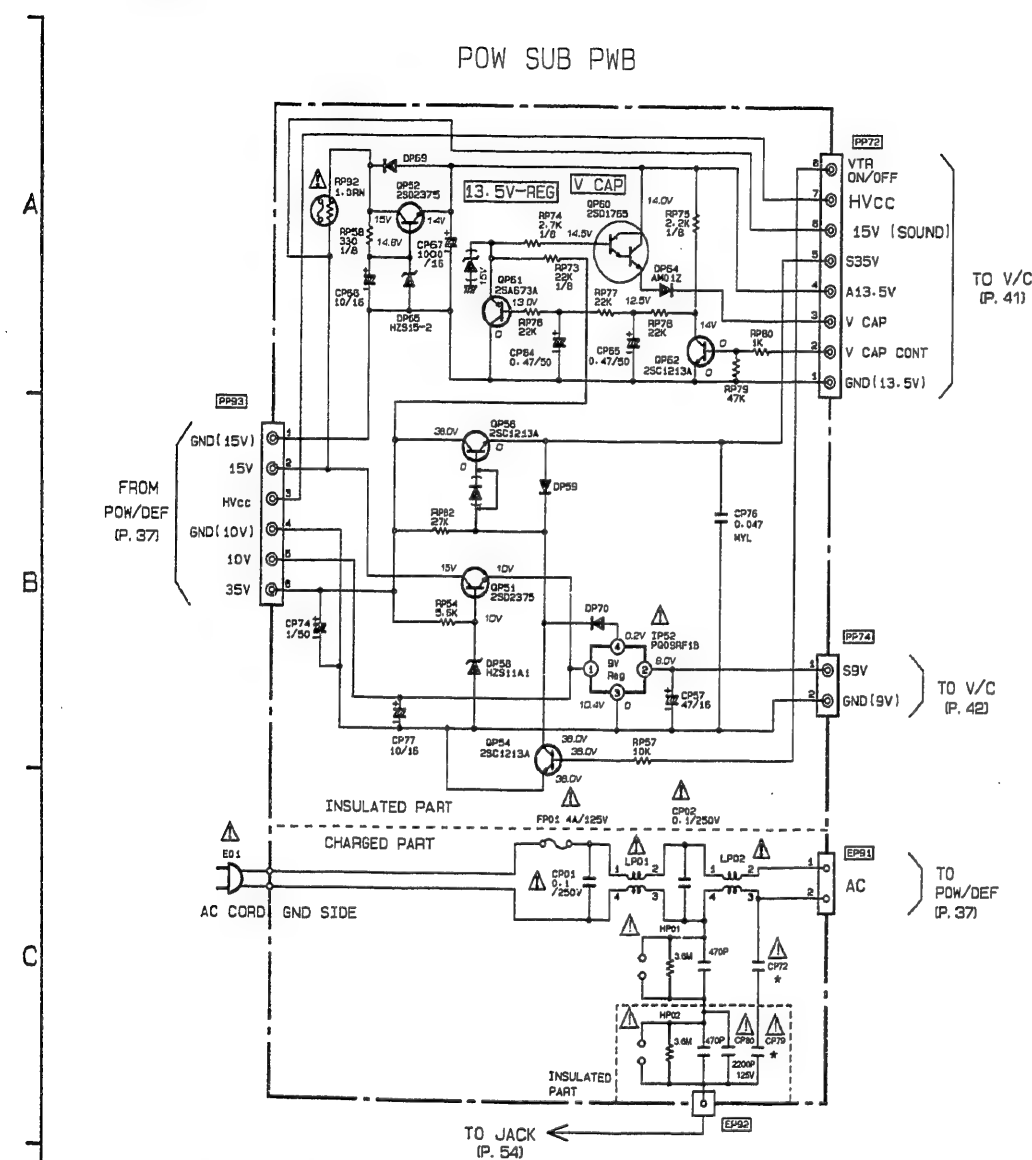
⑭ TH02 (H)



⑮ PG81 Connector (1) Pin



Power Sub P.W.B.



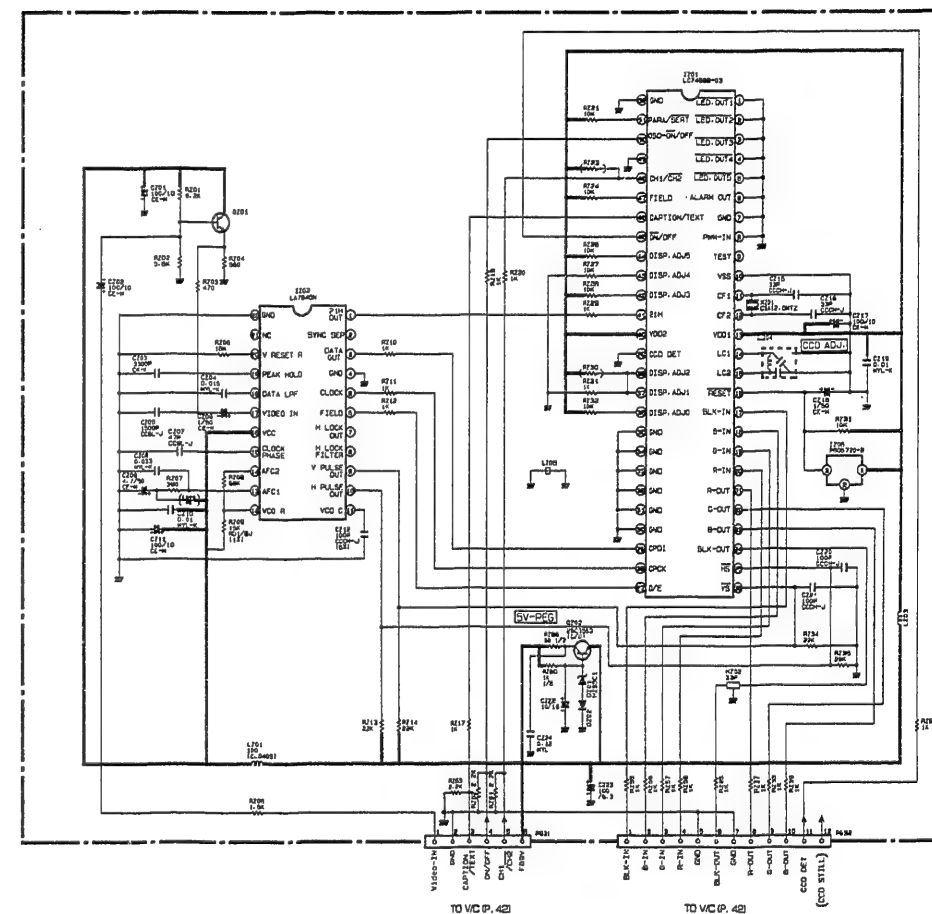
MODEL	13VR38	20VR48
CIRCUIT NUMBER		
FRQ1	2.5A/250V	4A/125V

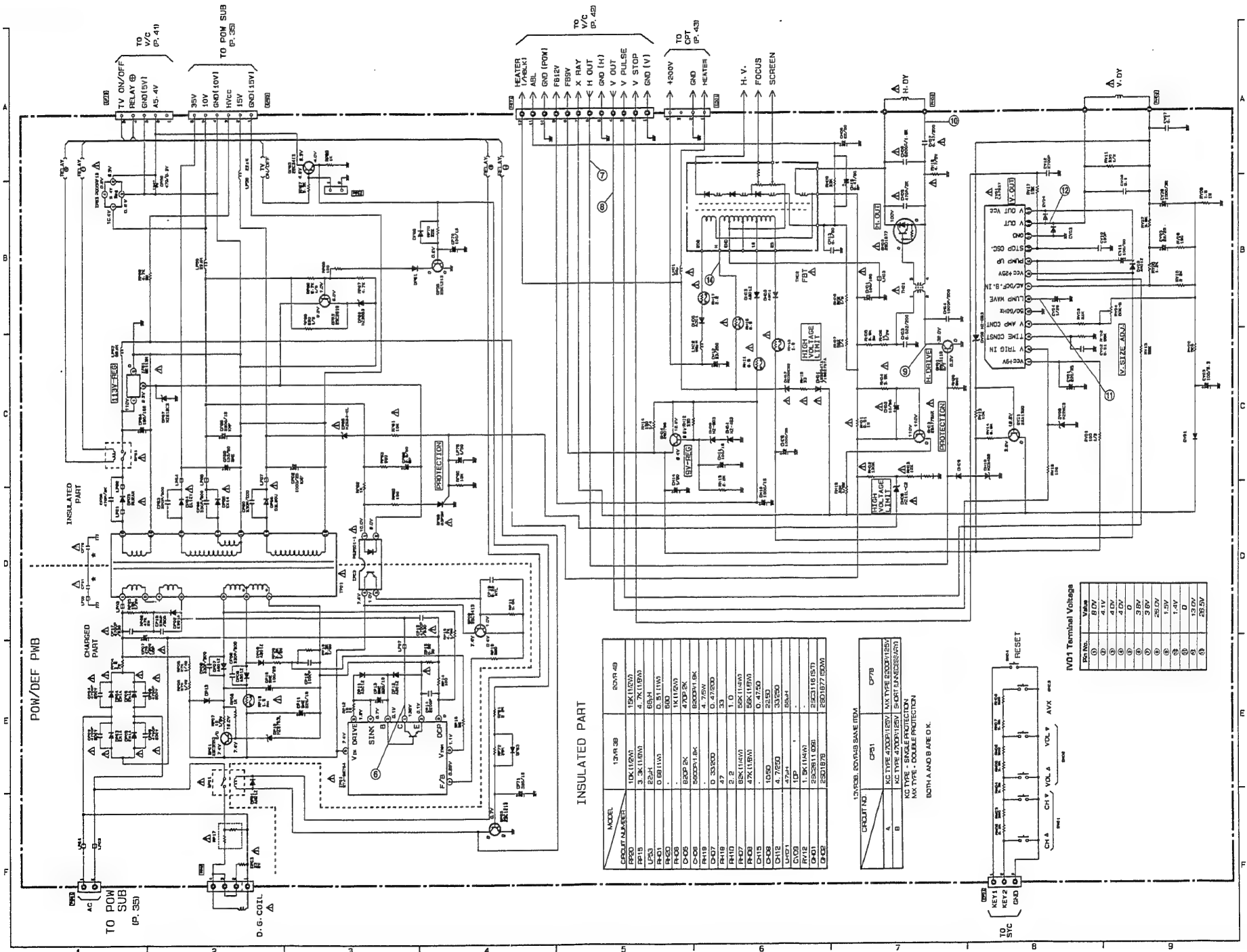
13VR38, 20VR48 SAME ITEM		
CIRCUIT NO.	CP72	CP79
A	KC TYPE 1000P/125V	KC TYPE 1000P/125V
B	MX TYPE 470P/125V	SHORT (UNNECESSARY)

KC TYPE - SINGLE PROTECTION
MX TYPE - DOUBLE PROTECTION

BOTH A AND B ARE O.K.

CCD P.W.B.

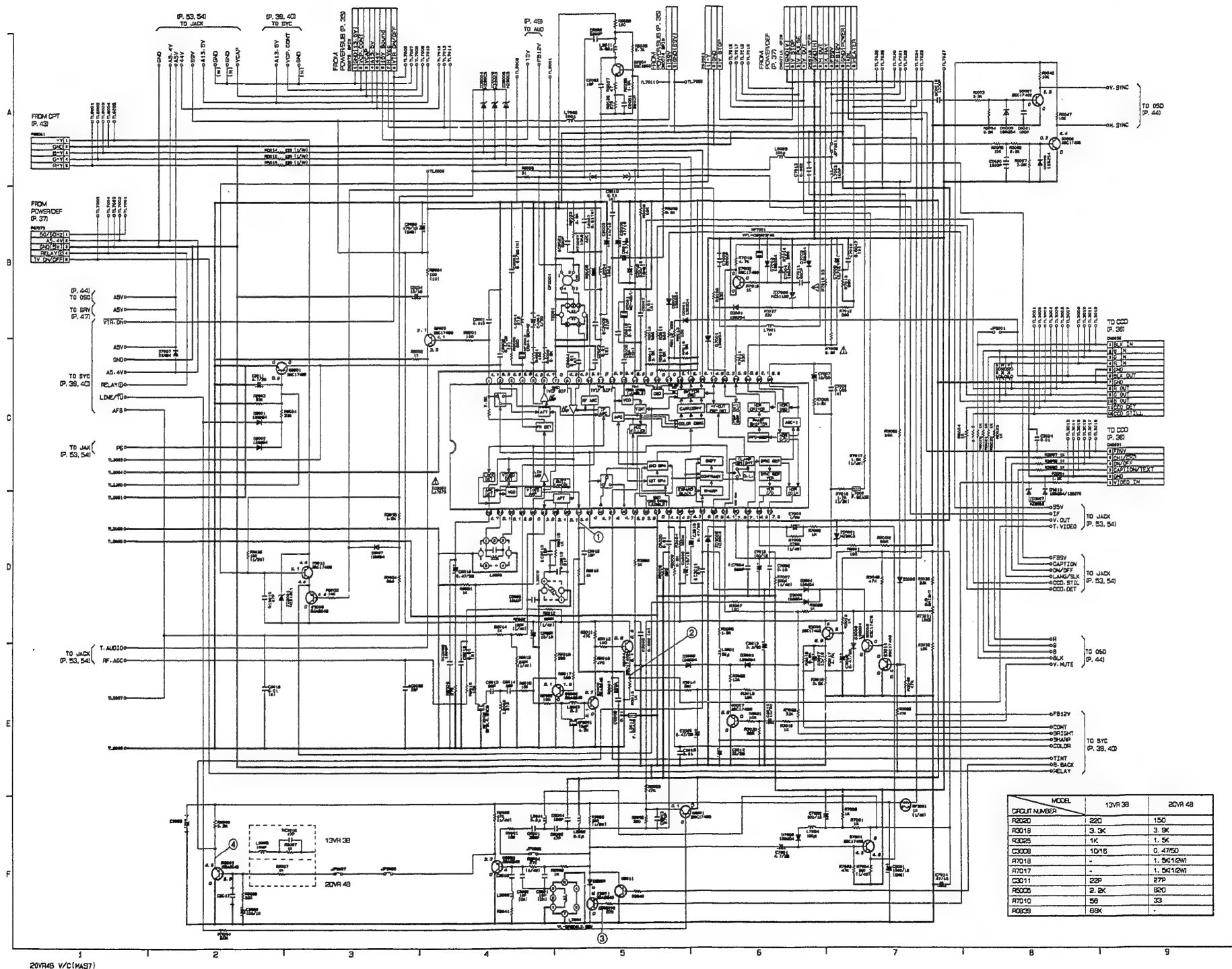






13VR3B/20VR4B

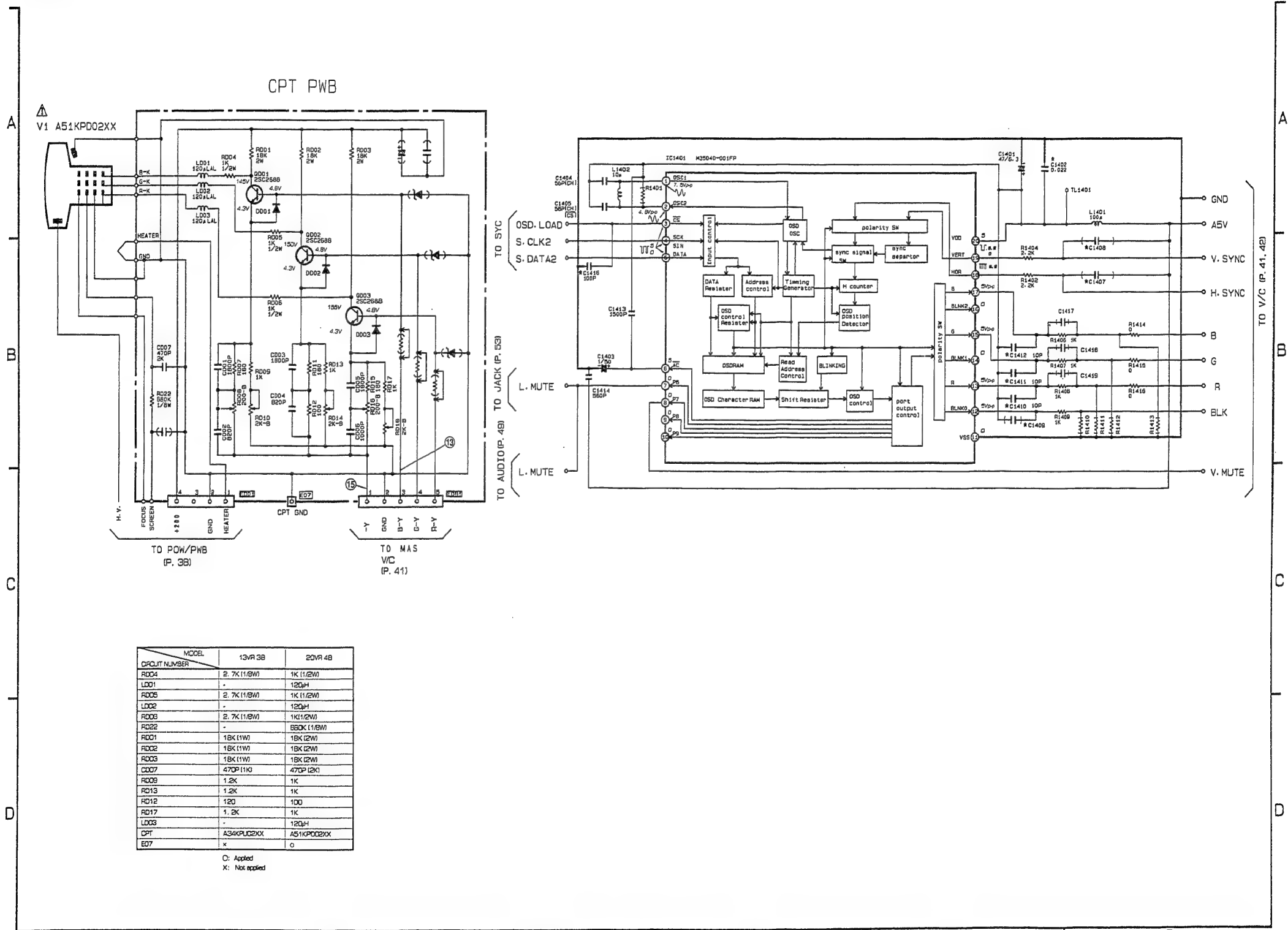
Video/Chroma (MAS) P.W.B.



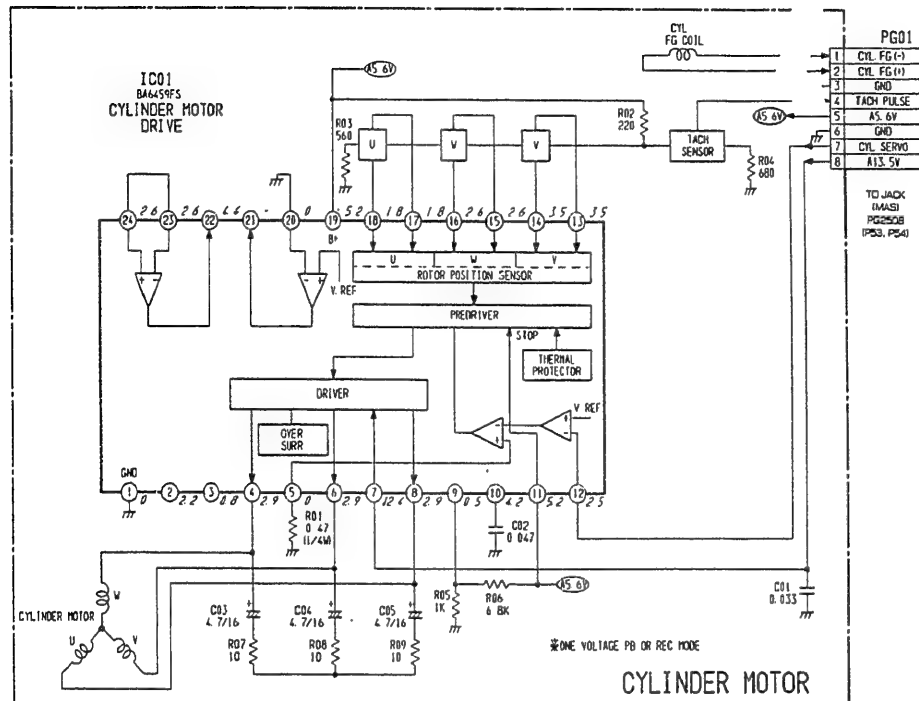
20VR4B V/C(MAS7)

CPT P.W.B.

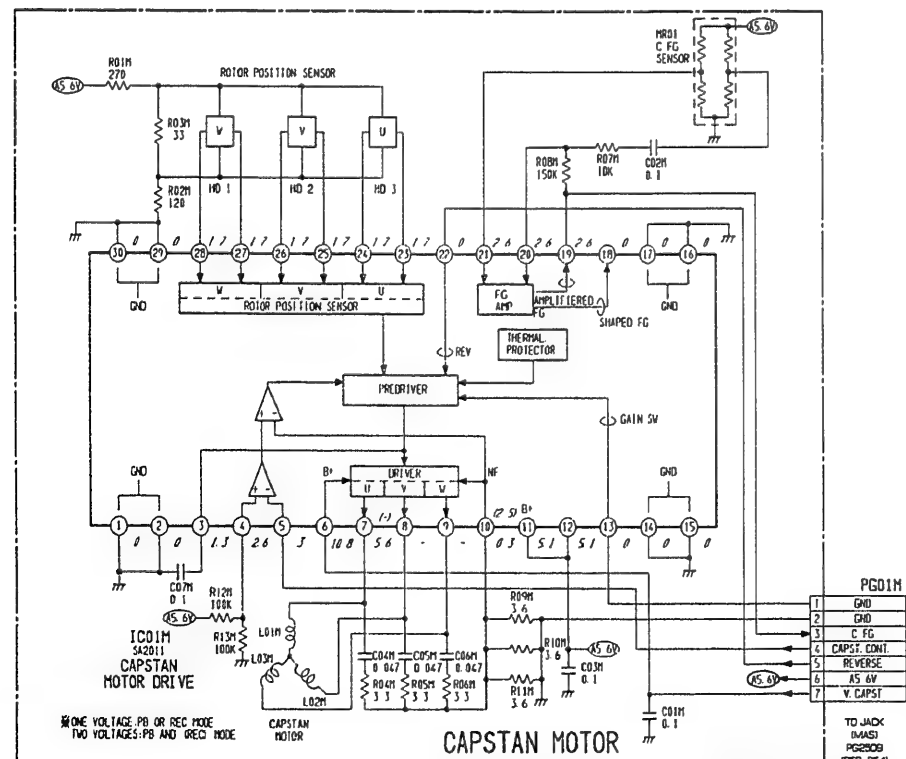
OSD (MAS) P.W.B.



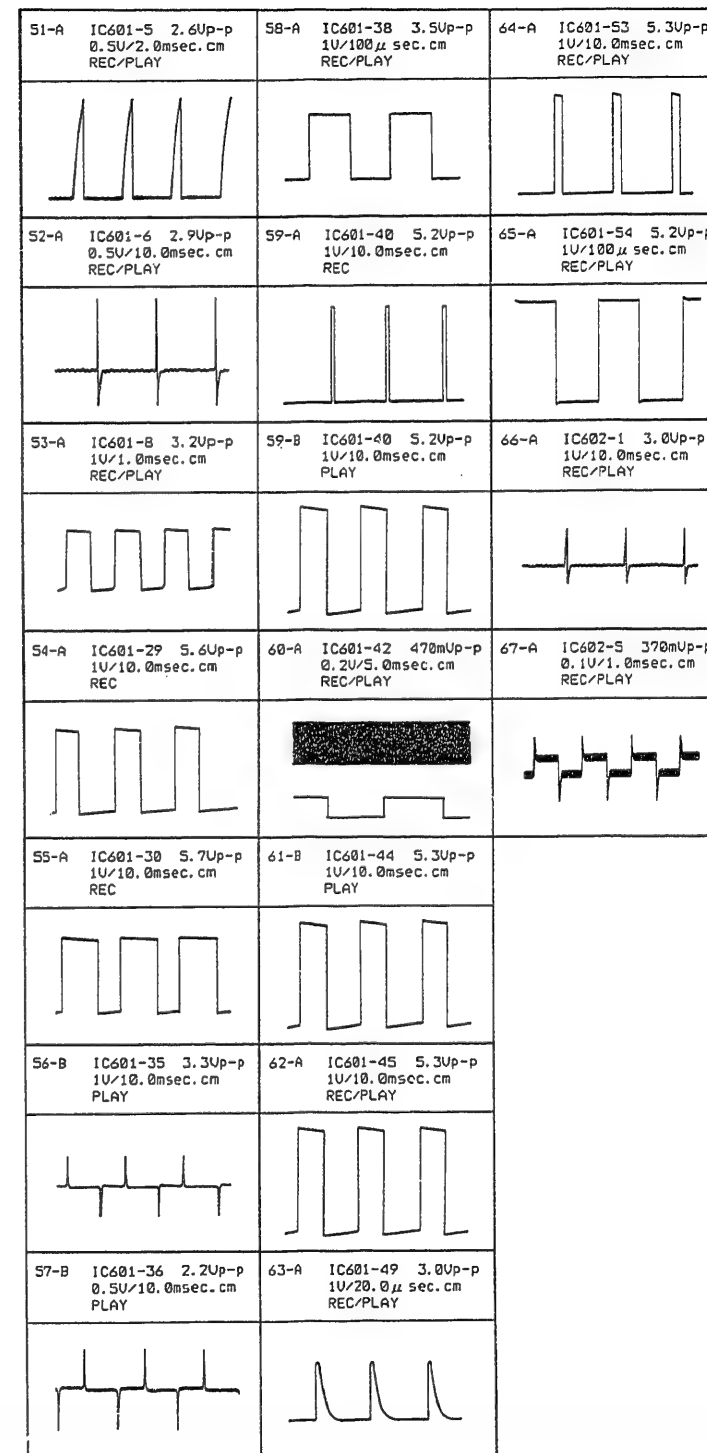
Cylinder Motor P.W.B.



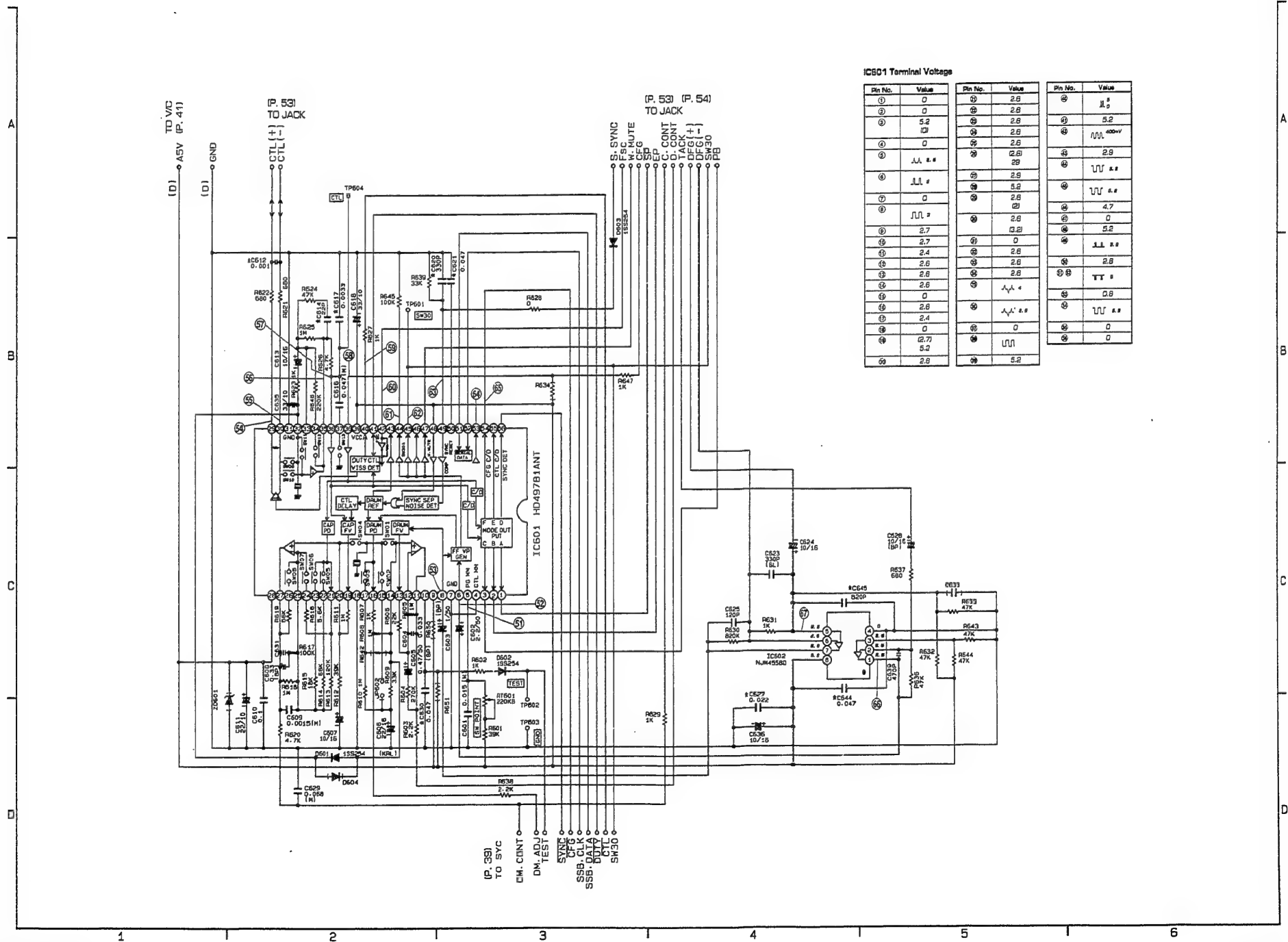
Capstan Motor P.W.B.



Servo Waveforms



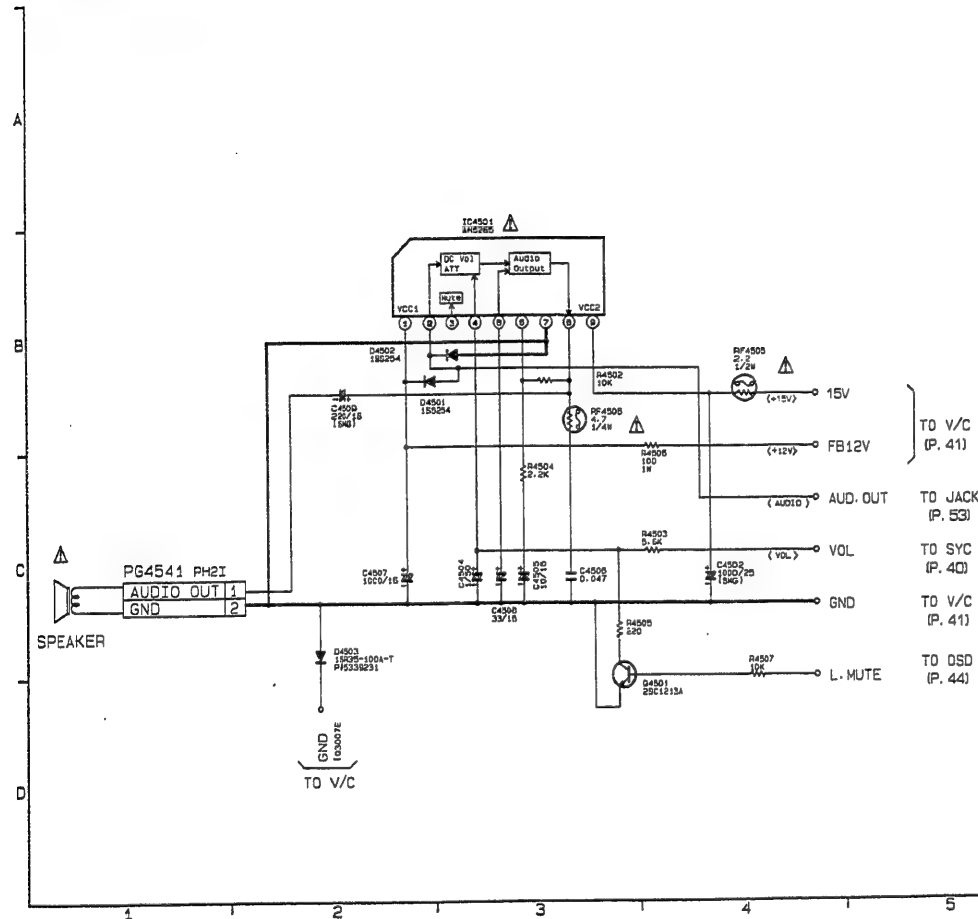
Servo (MAS) P.W.B.



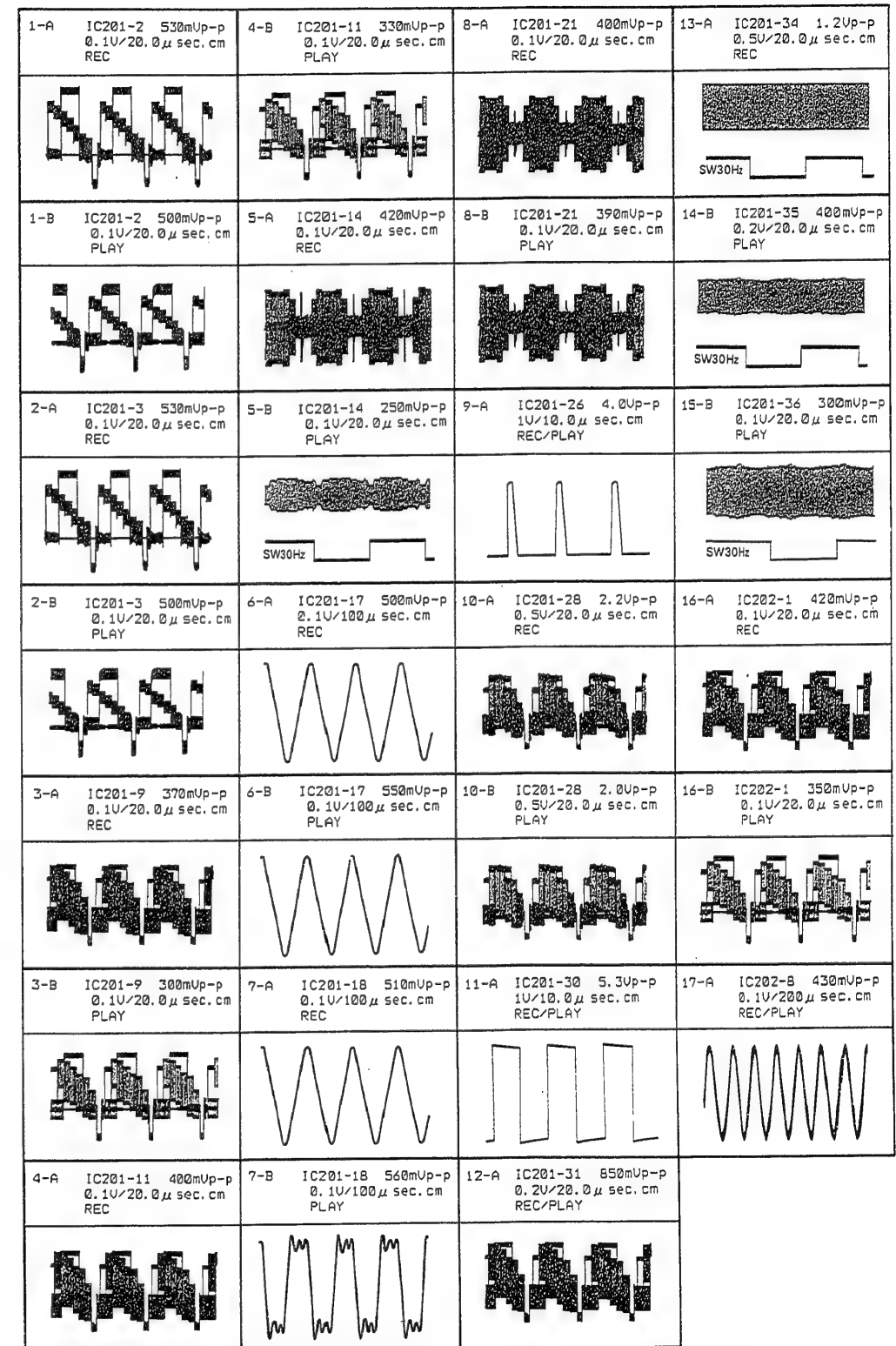
IC601 Terminal Voltage

Pin No.	Value	Pin No.	Value	Pin No.	Value
1	0	11	2.6	21	5.2
2	0	12	2.6	22	5.2
3	5.2	13	2.6	23	5.2
4	0	14	2.6	24	5.2
5	0	15	2.6	25	5.2
6	1.1	16	2.6	26	5.2
7	0	17	2.6	27	5.2
8	0	18	2.6	28	5.2
9	0	19	2.6	29	5.2
10	0	20	2.6	30	5.2
11	0	21	5.2	31	5.2
12	0	22	5.2	32	5.2
13	0	23	5.2	33	5.2
14	0	24	5.2	34	5.2
15	0	25	5.2	35	5.2
16	0	26	5.2	36	5.2
17	0	27	5.2	37	5.2
18	0	28	5.2	38	5.2
19	0	29	5.2	39	5.2
20	0	30	5.2	40	5.2
21	0	31	5.2	41	5.2
22	0	32	5.2	42	5.2
23	0	33	5.2	43	5.2
24	0	34	5.2	44	5.2
25	0	35	5.2	45	5.2
26	0	36	5.2	46	5.2
27	0	37	5.2	47	5.2
28	0	38	5.2	48	5.2
29	0	39	5.2	49	5.2
30	0	40	5.2	50	5.2

Audio (MAS) P.W.B.

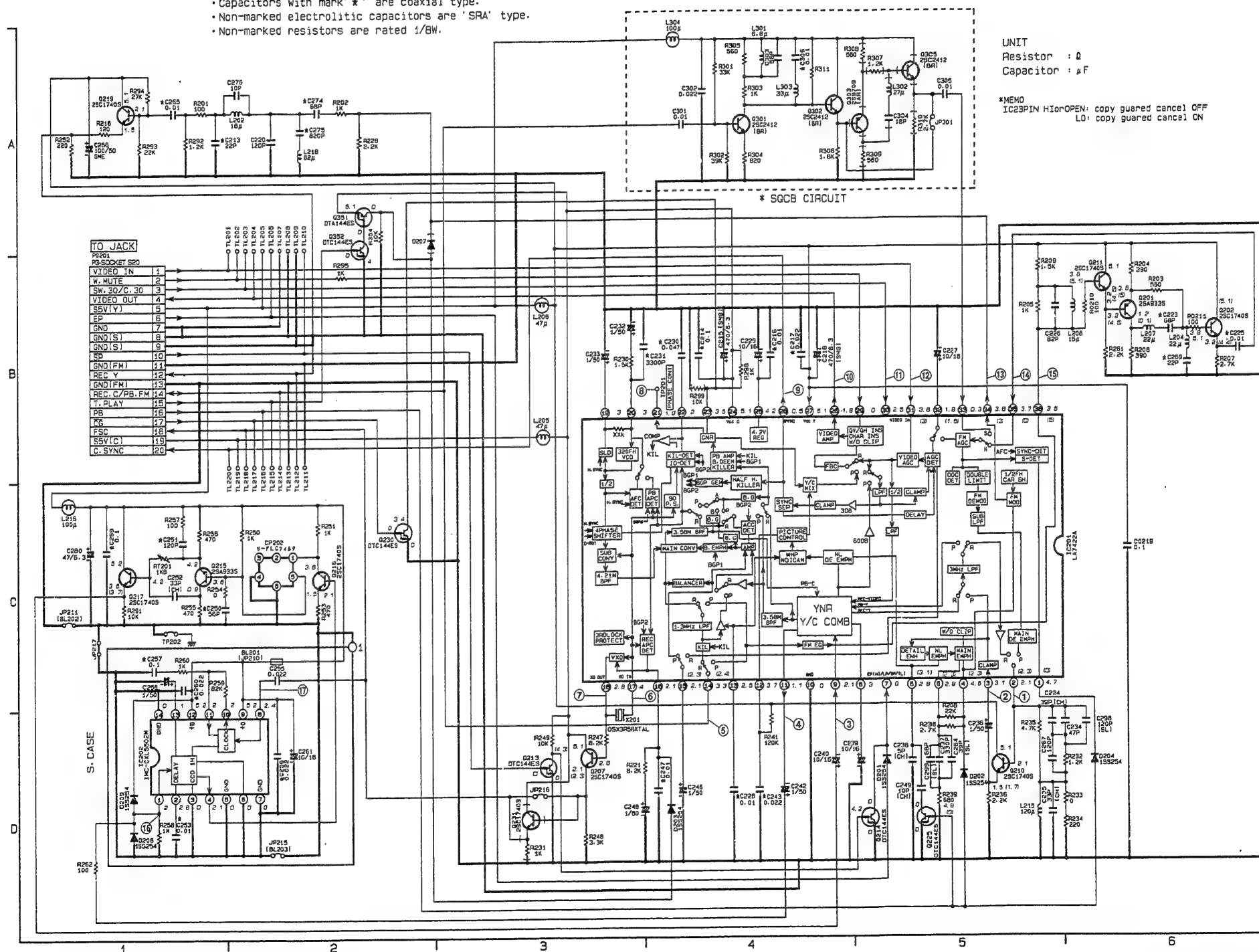


Y/Colour Circuit Waveform

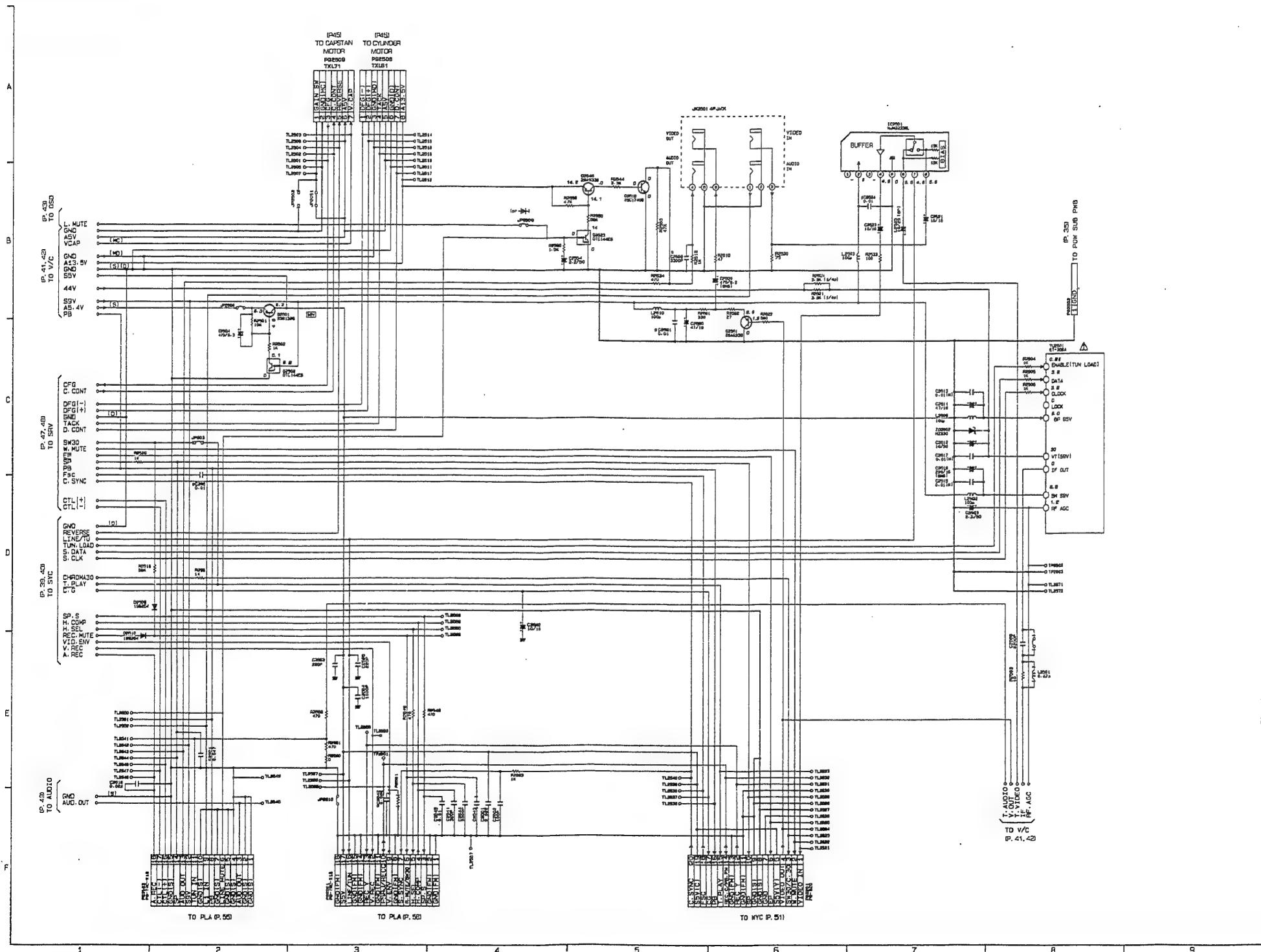


UNIT
Resistor : Ω
Capacitor : μF

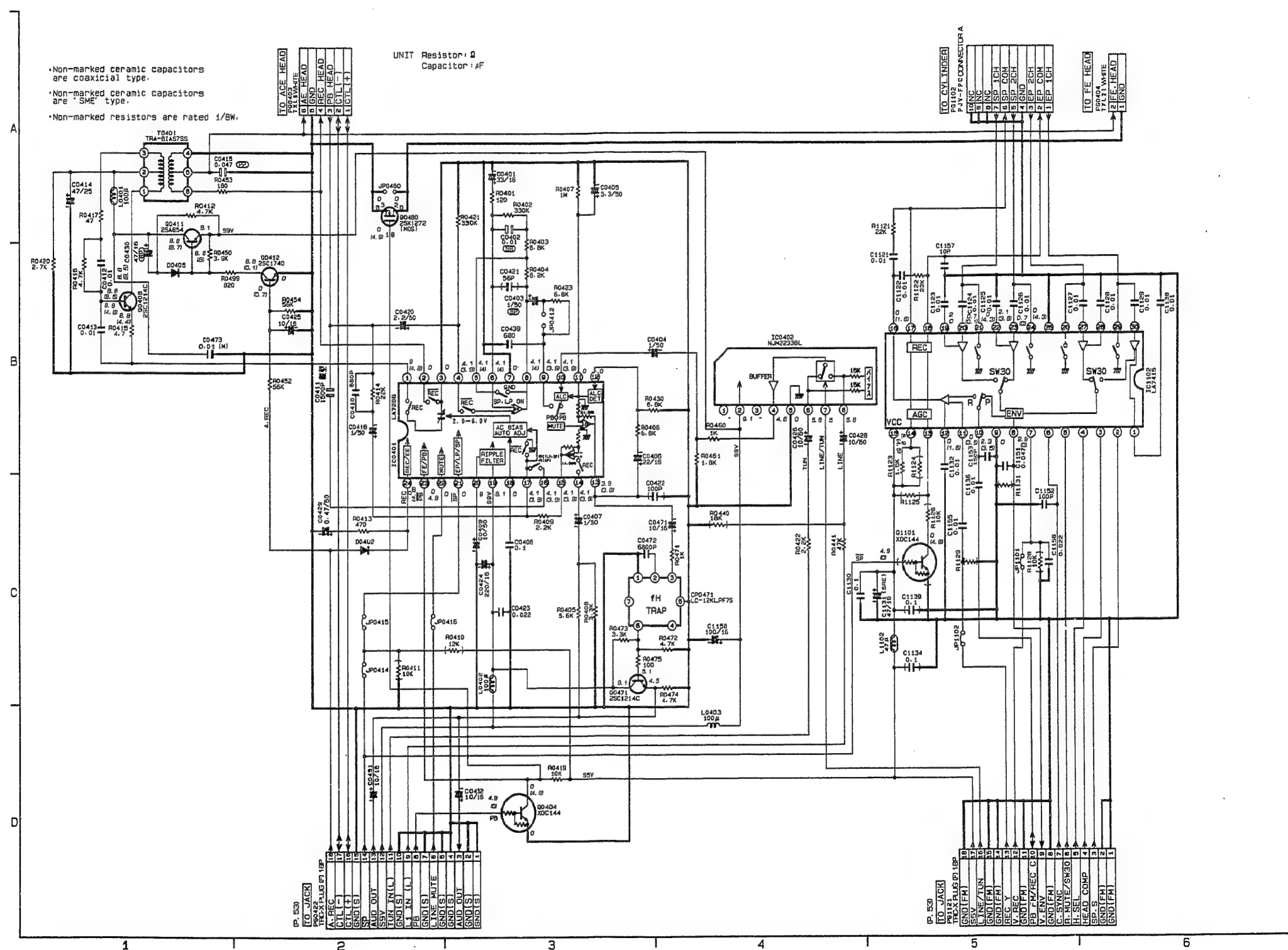
```
*MEMO
IC23PIN HIorOPEN: copy guared cancel OFF
                  LO: copy guared cancel ON
```



Jack (MAS) P.W.B.



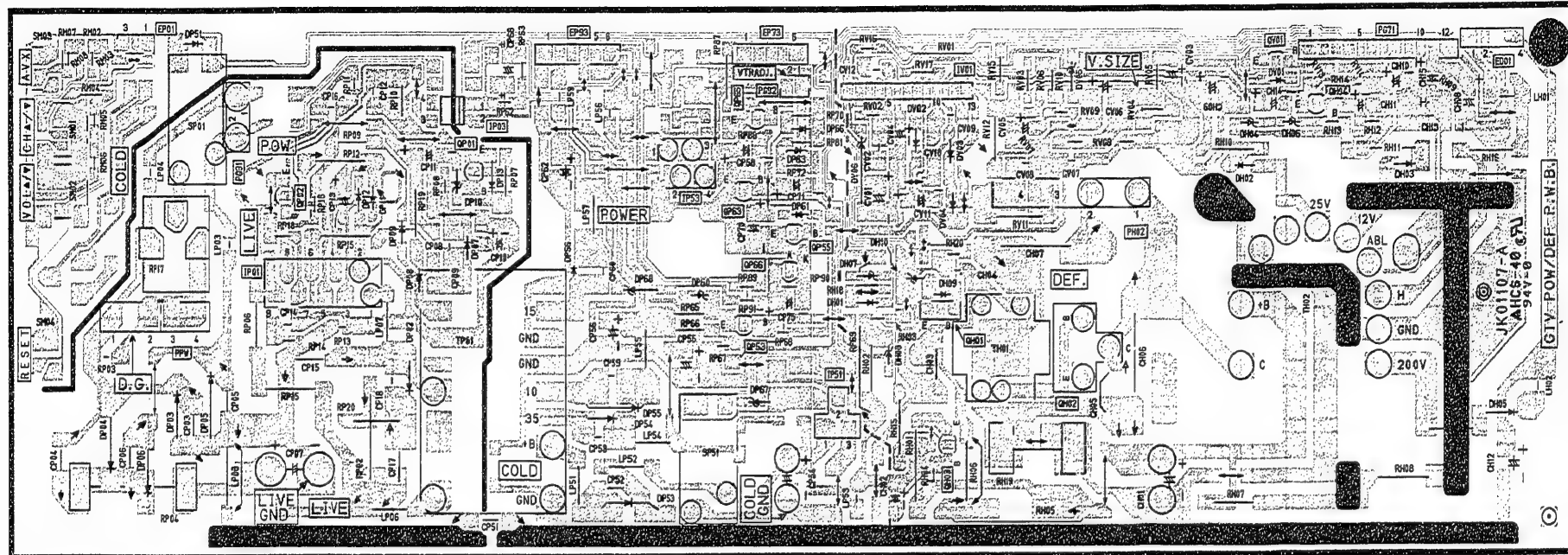
PLA P.W.B.



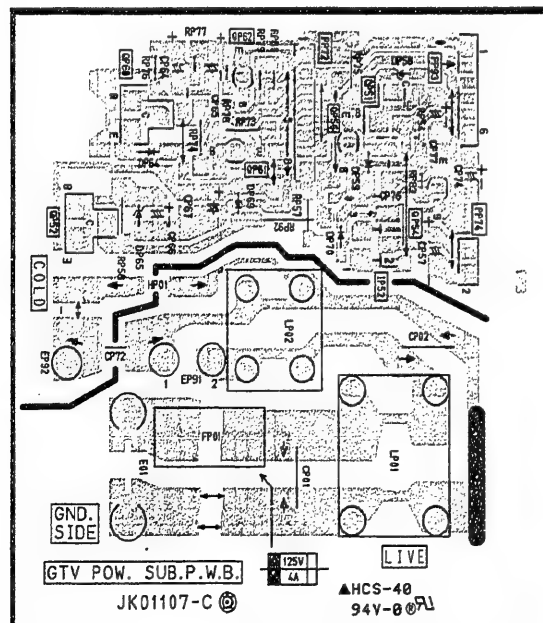
13VR3B/20VR4B

PRINTED WIRING BOARD

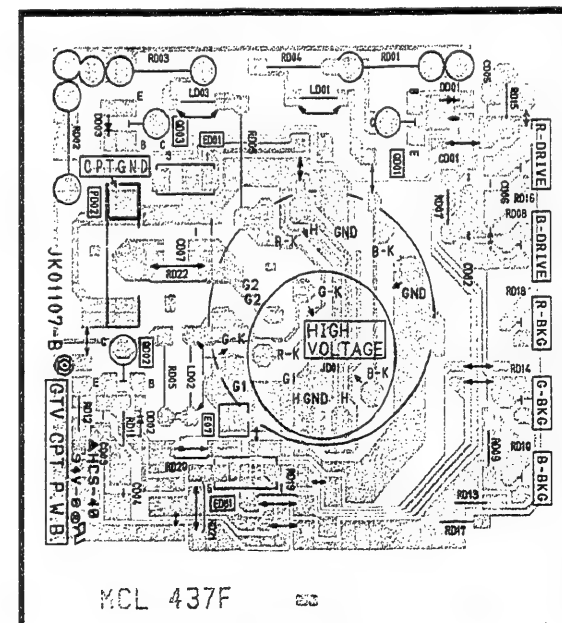
POW/DEF P.W.B.

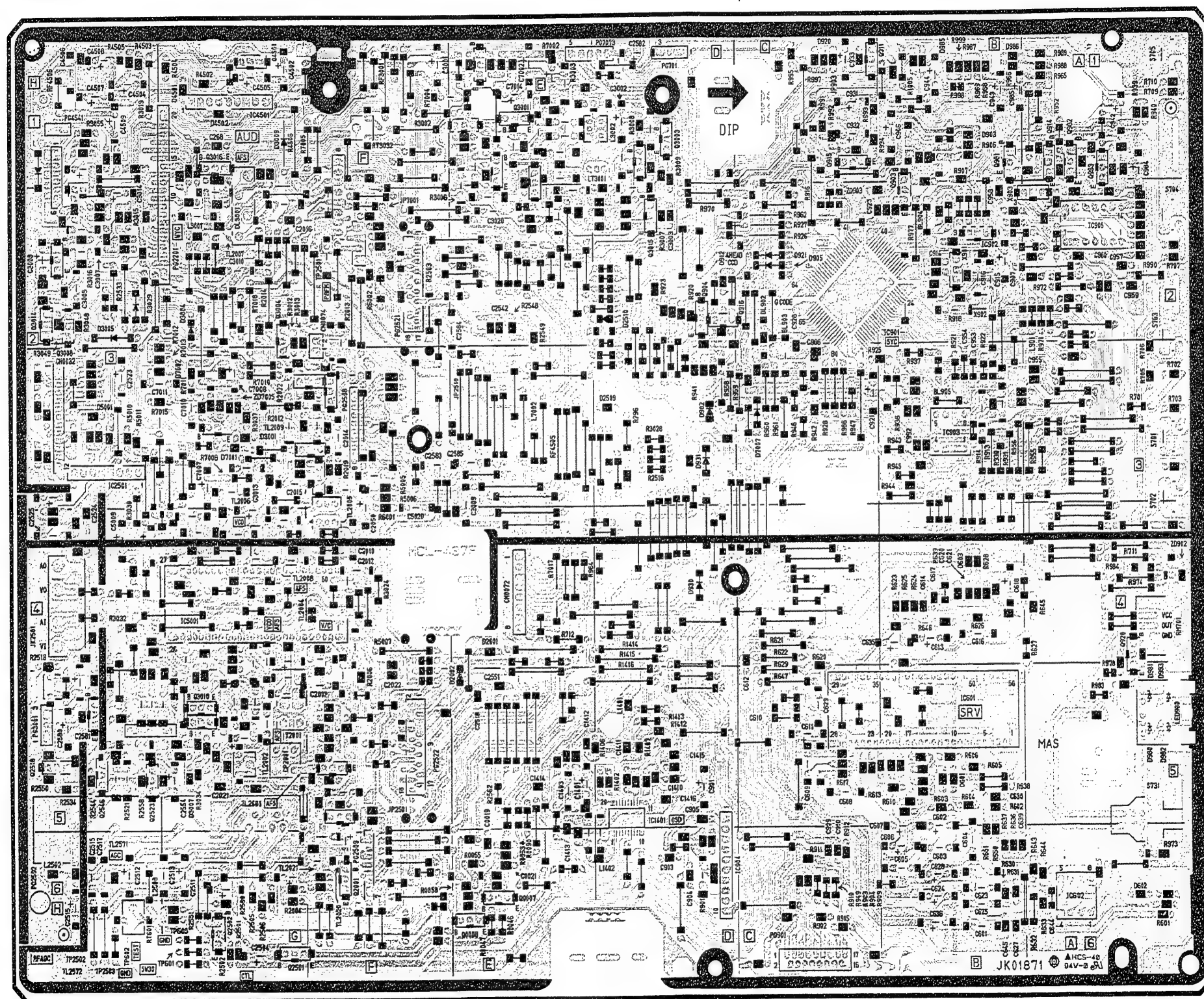


POW SUB P.W.B.

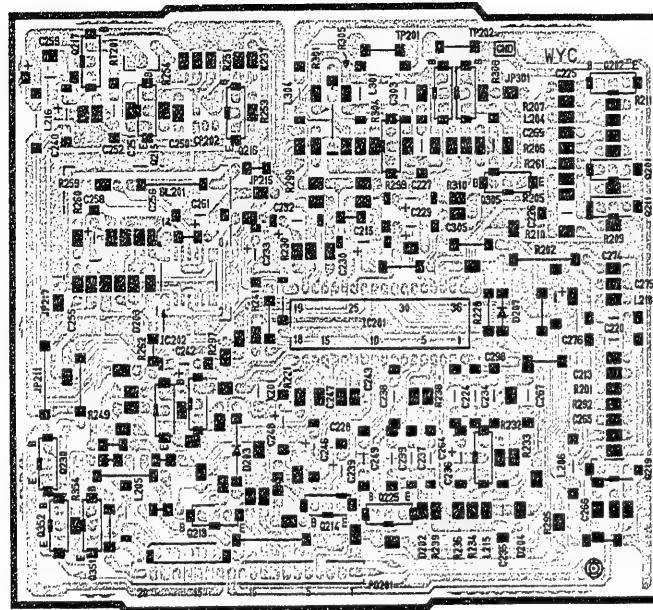


CPT P.W.B.

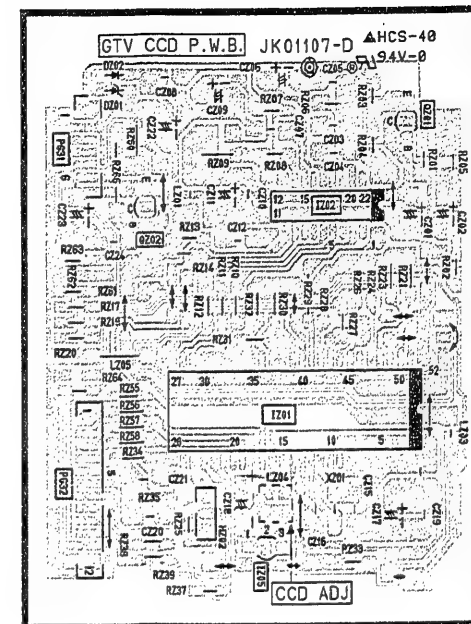




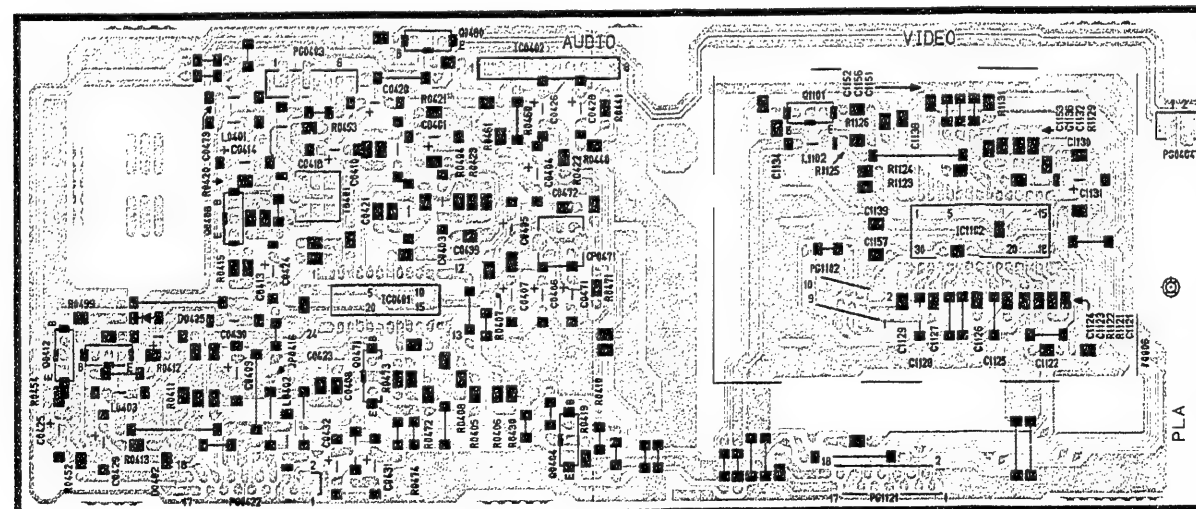
WYC P.W.B.



CCD P.W.B.

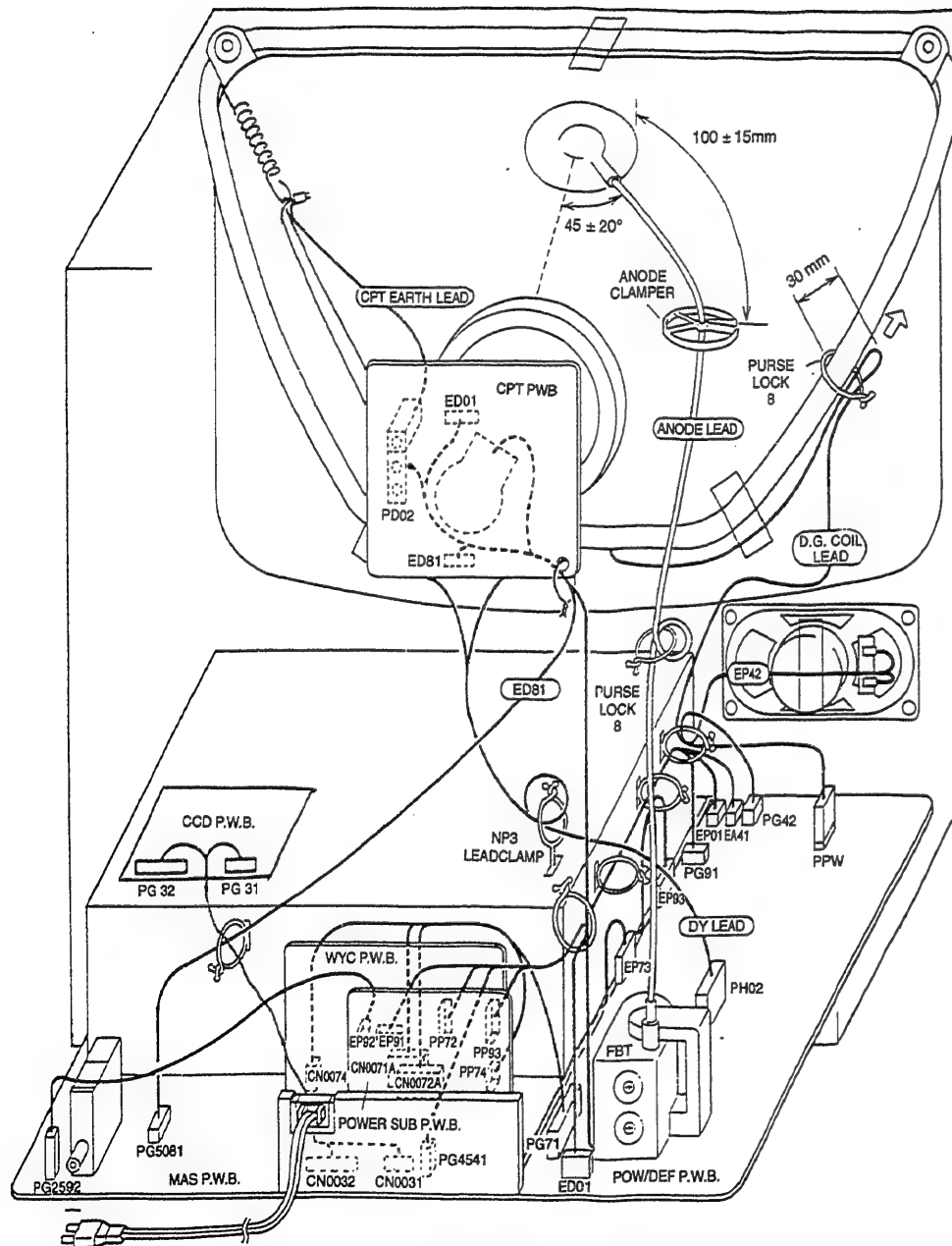


PLA P.W.B.

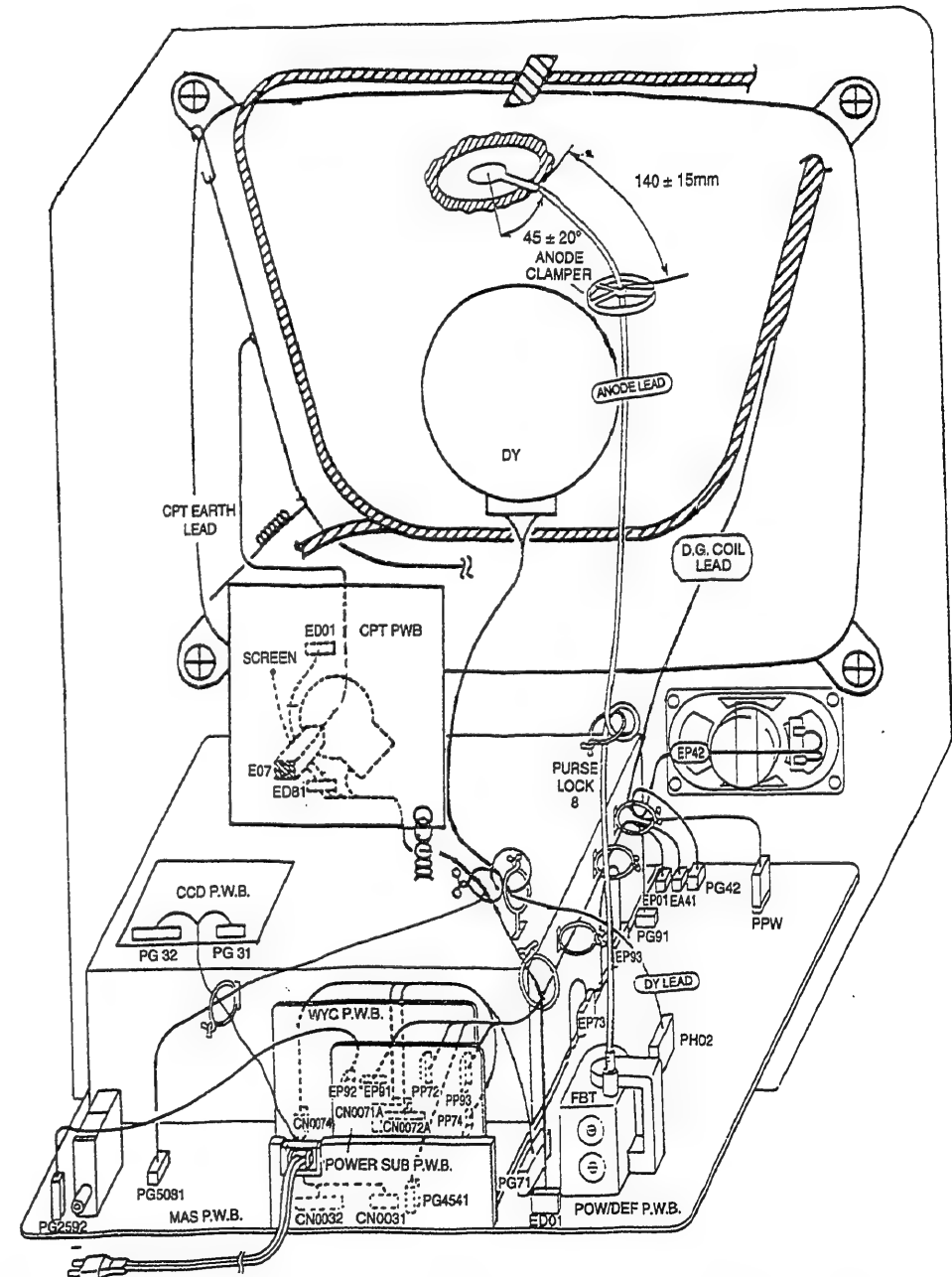


ASSEMBLY WIRING DIAGRAM

13VR3B



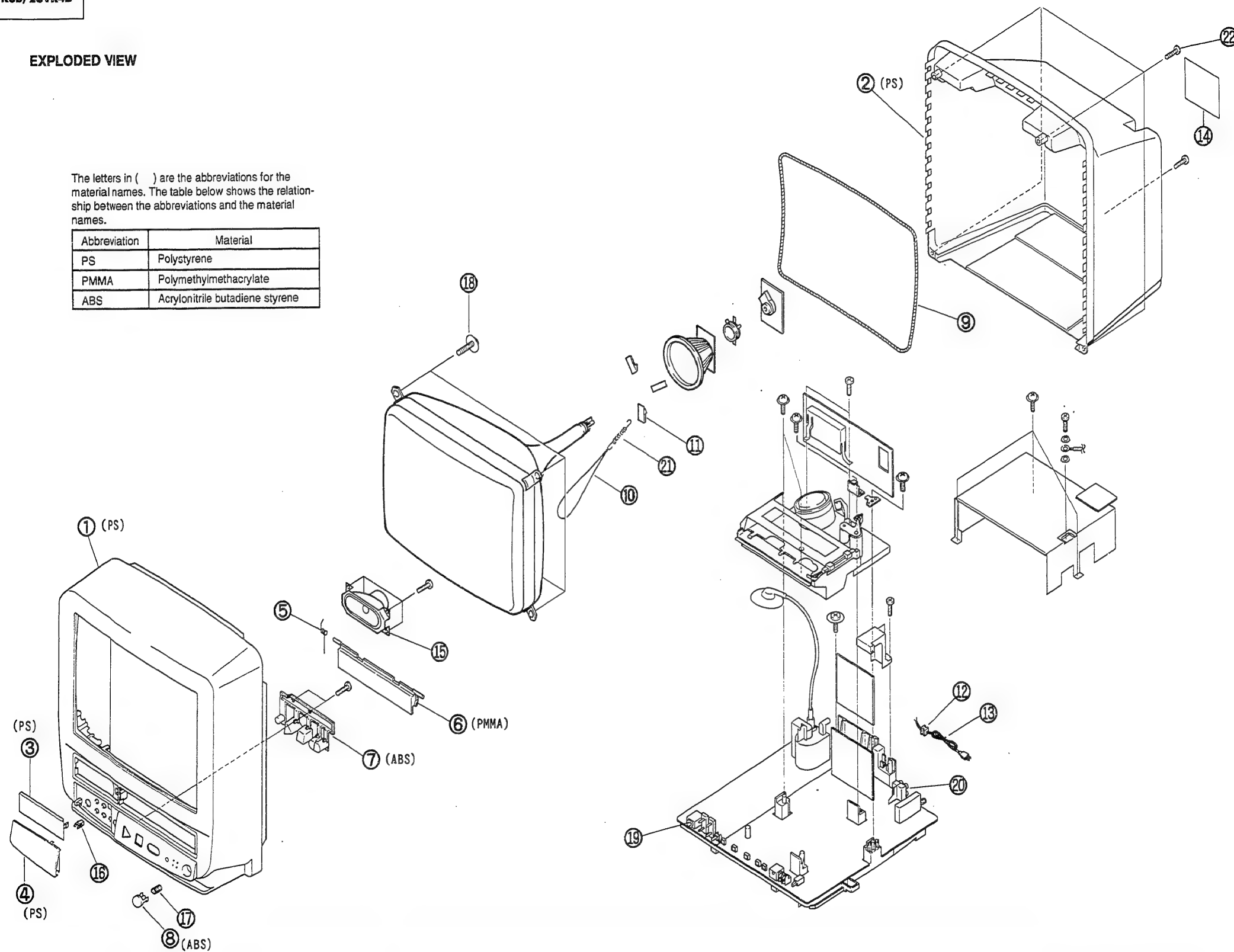
20VR4B



EXPLODED VIEW

The letters in () are the abbreviations for the material names. The table below shows the relationship between the abbreviations and the material names.

Abbreviation	Material
PS	Polystyrene
PMMA	Polymethylmethacrylate
ABS	Acrylonitrile butadiene styrene



REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE: Components marked with a Δ have a special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS

Capacitors:	CD:	Ceramic Disc	Resistors:	CF:	Carbon Film	Semiconductors:	TA:	Transistor
	PF:	Polyester Film		CC:	Carbon		DI:	Diode
	EL:	Electrolytic			Composition		ZD:	Zener Diode
	PP:	Polypropylene		MF:	Metal Oxide		VA:	Varistor
	PR:	Paper			Film		TH:	Thermistor
	TA:	Tantalum		VR:	Variable		IC:	Integrated
	TM:	Trimmer			Resistor			Circuit
	CQ:	Plastic Film		WW:	Wire Wound			
				FR:	Fuse Resistor			
				MG:	Metal Glaze			

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
		EXPLODED VIEW			
	1	FRAME ASSY	CH09	0800084	EL 1000UF-M 35V
	2	BACK COVER	CH10	0800082	EL 1000UF-M 16V
	3	SPEAKER GRILL	CH 11	0800049	EL 100UF-M 16V
	4	CONTROL DOOR	CH12	0253974 **	EL 33UF 250V
	5	CASSETTE DOOR SPRING		0259171 *	EL 4.7UF-HR 250V
	6	CASSETTE DOOR	CH13	0880057	PF 0.1UF-KEB 50V
	7	BUTTON BLOCK	CH14	0800003	EL 1.0UF-M 50V
	8	POWER BUTTON	CH15	0284621	EL 0.47UF 50V (BP)
Δ	9	DEGAUSSING COIL	CP01	AN00144S	PL 0.1UF250V
	10	CPT EARTH LEAD	Δ CP02	AN00144S	PL 0.1UF250V
	11	WEDGE	Δ CP03	0248593	CD 4700PF-Z 250V
	12	POWER CORD HOLDER	Δ CP04	0248593	CD 4700PF-Z 250V
Δ	13	POWER CORD	Δ CP05	0248593	CD 4700PF-Z 250V
	14	RATING LABEL	Δ CP06	0248593	CD 4700PF-Z 250V
Δ	15	SPEAKER	CP07	0253891	EL 470UF 200V HR
	16	LATCH	CP08	0243507	CD 330PF-K 5000V
	17	POWER KNOB SPRING	CP09	0243507	CD 330PF-K 5000V
	18	CPT FIXING SCREW	CP10	0800051	EL 100UF-M 25V
Δ	19	EARPHONE JACK	CP11	0800058	EL 220UF-M 16V
	20	AUDIO/VIDEO JACK	CP12	0880031	PP 1000PF-K 50V
	21	EARTH SPRING	CP13	0800058	EL 220UF-M 16V
	22	REAR COVER FIXING SCREW	CP14	0244105	CD 2200PF-K 50V
		CAPACITORS	CP15	0299977	PP 0.0047UF-F 630V
CD01	0244104	CD 0.0018UF-K 50V	CP16	0880198	CQ 0.22UF 50V
CD02	0890086	CD 820PF-K 50V	CP17	0299977	PP 0.0047UF-F 630V
CD03	0244104	CD 0.0018UF-K 50V	CP18	0243507	CD 330PF-K 500V
CD04	0890086	CD 820PF-K 50V	CP51	AJ00115	CD 2200PF 125V (MX)
CD05	0244104	CD 0.0018UF-K 50V	CP52	0244202	CD 470PF-KF 2KV
CD06	0890087	CD 1000PF-K 50V	CP53	0243507	CD 330PF-K 500V
CD07	0244202 **	CD 470PF-KF 2KV	CP54	0259402	EL 180UF-HRF 160V
	0245605 *	CD 470PF 100V	CP55	0800053	EL 100UF-M 50V
CH01	0254822	CD 101M161WML(HR)	CP56	0284409	EL KMF 2200/160V
CH02	0800018	EL 10UF-M 50V	CP57	0800041	EL 47UF-M 16V
CH03	0299918	PP 0.022UF 200V	CP58	0800072	EL 470UF-M 6.3V
CH04	0244501	CD 1000PF-K 500V	CP59	0243507	CD 330PF-K 500V
Δ CH05	0244202 **	CD 470PF-KF 2KV	CP60	0243507	CD 330PF-K 500V
	0244210 *	CD 820PF-K 2KV	CP62	0284425	EL KMF 1000/25V
Δ CH06	0262421 *	PF 0.0056UF 1.8KV	CP64	0800001	EL 0.47UF-M 50V
	0262425 **	PF 0.0082UF 1.8KV	CP65	0800001	EL 0.47UF-M 50V
CH07	0299932 *	PP 0.33UF-K 200V	CP66	0800015	EL 10UF-M 16V
	0299934 **	PP 0.47UF-K 200V	CP67	0800082	EL 1000UF-M 16V
CH08	0800018 *	EL 10UF-M 50V	CP68	0284625	EL 2.2UF-SME(BP) 50V
	0800026 **	EL 22UF-M 50V	CP70	0800049	EL 100UF-M 16V
			CP71	0800058	EL 220UF-M 16V
			CP72	AJ00115	CD 2200PF 125V (MX)
			CP74	0800003	EL 1.0UF-M 50V
			CP75	0800003	EL 1.0UF-M 50V

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
CP76	0880053	PF 0.047UF-KEB 50V	C0630	0890045	PF 0.047UF-KEB 50V
CP77	0800015	EL 10UF-M 16V	C0635	0800134	EL 33UF-M 10V
CP78	0249394	CD 4700-KF F 125V	C0636	0800122	EL 10UF-M 16V
CP79	0249391	CD 1000PF-B 125V	C0932	0800182	EL 22UF 16V
CP80	0249392	CD 2200PF 125V	C0933	0800109	EL 1UF 50V
CV01	0800059	EL 220UF-M 25V	C0938	0800109	EL 1UF 50V
CV02	0880044	PF 0.01UF-KEB 50V	C0942	0800109	EL 1UF 50V
CV03	0800047	EL 100UF-M 6.3V	C0943	0800109	EL 1UF 50V
CV04	0292716	TA 1.0UF-KF 20V	C0944	0800109	EL 1UF 50V
CV05	0800016	EL 10UF-M 25V	C0950	0890032	CD 560PF-K B 50V
	0800024	EL 22UF-M 25V	C0951	0890032	CD 560PF-K B 50V
CV06	0800084	EL 1000UF-M 35V	C0952	0890022	CD 100PF-K B 50V
CV07	0880057	PF 0.1UF-KEB 50V	C0953	0890022	CD 100PF-K B 50V
CV08	0880057	PF 0.1UF-KEB 50V	C0954	0890026	CD 220 PF-K B 50V
CV09	0890061	CD 10PF 50V	C0955	0890022	CD 100PF-K B 50V
CV10	0248684	CD 100PF-J SL 50V	C0956	0890022	CD 100PF-K B 50V
CV11	0800053	EL 100UF-M 50V	C0957	0890025	CD 180PF-K B 50V
CV12	0244106	CD 0.0027UF-K B 50V	C0958	0890022	CD 100PF-K B 50V
CZ01	0800048	EL 100UF-M 10V	C0959	0890022	CD 100PF-K B 50V
CZ02	0800048	EL 100UF-M 10V	C0960	0890036	CD 1500PF-M X 16V
CZ03	0244107	CD 3300PF-K 50V	C0961	0890022	CD 100PF-K B 50V
CZ04	0880046	PF 0.015UF-K 50V	C0962	0890022	CD 100PF-K B 50V
CZ05	0890089	CD 1500PF-K 50V	C0963	0890022	CD 100PF-K B 50V
CZ06	0800003	EL 1.0UF-M 50V	C0964	0890022	CD 100PF-K B 50V
CZ07	0890069	CD 47PF-J 50V	C0965	0890022	CD 100PF-K B 50V
CZ08	0880051	PF 0.033UF-KEB 50V	C0932	0800182	EL 22UF 16V
CZ09	0800012	EL 4.7UF-M 50V	C0933	0800109	EL 1UF 50V
CZ10	0880044	PF 0.01UF-KEB 50V	C0938	0800109	EL 1UF 50V
CZ11	0800048	EL 100UF-M 10V	C0942	0800109	EL 1UF 50V
CZ12	0246464	CD 100PF-J CH 50V	C0943	0800109	EL 1UF 50V
CZ15	0890121	CD 33PF-J CH 50V	C0944	0800109	EL 1UF 50V
CZ16	0890121	CD 33PF-J CH 50V	C0950	0890032	CD 560PF-K B 50V
CZ17	0800048	EL 100UF-M 10V	C0951	0890032	CD 560PF-K B 50V
CZ18	0800003	EL 1.0 UF-M 50V	C0952	0890022	CD 100PF-K B 50V
CZ19	0880044	PF 0.01UF-KEB 50V	C0953	0890022	CD 100PF-K B 50V
CZ20	0246464	CD 100PF-J CH 50V	C0954	0890026	CD 220 PF-K B 50V
CZ21	0246464	CD 100PF-J CH 50V	C0955	0890022	CD 100PF-K B 50V
CZ22	0800015	EL 10UF-M 16V	C0956	0890022	CD 100PF-K B 50V
CZ23	0800048	EL 100UF-M 10V	C0957	0890025	CD 180PF-K B 50V
CZ24	0880198	CQ 0.22UF 50V	C0958	0890022	CD 100PF-K B 50V
C0019	0890035	CD 1000PF-F 50V B	C0959	0890022	CD 100PF-K B 50V
C0021	0890022	CD 1000PF-M X 16V	C0960	0890036	CD 1500PF-M X 16V
C0268	0890043	CD 10000PF-N Y 16V	C0961	0890022	CD 100PF-K B 50V
C0601	0880046	PF 0.015UF-F 50V	C0962	0890022	CD 100PF-K B 50V
C0602	0800112	EL 2.2UF-M 50V	C0963	0890022	CD 100PF-K B 50V
C0603	0259384	EL 1.0UF-M 50V SRA-BP	C0964	0890022	CD 100PF-K B 50V
C0604	0880051	PF 0.033UF-KEB 50V	C0965	0890022	CD 100PF-K B 50V
C0605	0284621	EL 0.47UF 50V (BP)	C0966	0890046	CD 0.10 UF 50V
C0606	0254459	EL KRL 16VB22FT	C0978	0890043	CD 10000PF-N Y 16V
C0607	0800122	EL 10UF-M 16V	C0983	0890044	CD 22000PF-Z Y 16V
C0608	0259382	EL 0.33UF 50V	C0984	0800122	EL 10UF-M 16V
C0609	0880033	PF 0.0015UF-KEB 50V	C0985	0800122	EL 10UF-M 16V
C0610	0890046	CD 0.10UF 50V	C0986	0890043	CD 10000PF-N Y 16V
C0611	0800127	EL CE04W1A220MB(SRA)	C0992	0890043	CD 10000PF-N Y 16V
C0612	0890035	CD 1000PF-K 50V B	C1401	0800138	EL 47UF-M 6.3V
C0613	0800122	EL 10UF-M 16VB	C1402	0890044	CD 22000PF-Z Y 16V
C0614	0890013	CD 22UF 16V	C1403	0800019	EL 1UF 50V
C0616	0880053	PF 0.047UF-KEB 50V	C1404	0246458	CD 56PF-J CH 50V
C0617	0890038	CD 3300PF-M X 16V	C1405	0246458	CD 56PF-J CH 50V
C0618	0800134	EL 33UF-M 10V	C1410	0890008	CD 10PF J SL 50 T
C0620	0890028	CD 330PF-K B 50V	C1411	0890008	CD 10PF J SL 50 T
C0621	0890045	CD 0.047UF 50V	C1412	0890008	CD 10PF J SL 50 T
C0623	0248696	CD 330PF-J SL 50V	C1413	0890036	CD 1500PF-M X 16V
C0624	0800122	EL 10UF-M 16V	C1414	0890032	CD 560PF-K B 50V
C0625	0890075	CD 120PF-K 50V	C1415	0890035	CD 1000PF-K B 50V
C0627	0890044	CD 22000PF-Z Y 16V	C1416	0890022	CD 100PF-K B 50V
C0628	0259369	EL 10UF M 16V SRA-BP	C2001	0880046	PF 0.015UF-K 50V
C0629	0880055	PF 0.068UF-KEB 50V	C2002	0880057	PF 0.1UF-KEB 50V

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C2003	0880044	PF 0.01UF-KEB 50V	C3013	0800115	EL CE04W1H3R3MB(SRA)
C2004	0880044	PF 0.01UF-KEB 50V	C3014	0800125	EL 10UF-M 50V
C2005	0800122	EL 10UF-M 16V	C3015	0890017	CD 47PF-K 50V SL
C2006	0890031	CD 470PF-K B 50V	C3016	0890013	CD 22PS J SL 50 T
C2007	0880044	PF 0.01UF-KEB 50V	C3019	0890101	CD CCT103Z50D3
C2008	0800353	EL 470UF 16V	C3021	0890114	CD 10PF-D CH 50V
C2009	0890035	CD 1000PF-K 50V B	C3022	0890114	CD 10PF-D CH 50V
C2010	0800107	EL 0.47UF-M 50V	C3024	0880044	PF 0.01UF-KEB 50V
C2011	0800117	EL CE04W1E4R7MB(SRA)	C4502	0800362	EL SMG 25 VB 1000CC
C2012	0880044	PF 0.01UF-KEB 50V	C4504	0800109	EL 1UF 50V
C2013	0246458	CD 56PF-J CH 50V	C4505	0800122	EL 10UF-M 16V
C2014	0890122	CD 39PF-J 50V	C4506	0880053	PF 0.047UF-KEB 50V
C2015	0890063	CD 15PF-J 50V	C4507	0800361	EL 1000UF 16V
C2016	0880044	PF 0.01UF-KEB 50V	C4508	0800135	EL 33UF-M 16V
C2018	0246443	CD 13PF (C) 50WV	C4509	0800335	EL 220UF-M(SMG) 16V
C2019	0246463	CD 91PF-J CH 50V	C5001	0890082	CD 390PF-K 50V
C2021	0890026	CD 220PF-K B 50V	C5002	0890069	CD 47PF-J 50V
C2022	0890015	CD 33P 50V	C5003	0890079	CD 270PF-K 50V
C2023	0880044	PF 0.01UF-KEB 50V	C5004	0890074	CD 100PF-J 50V
C2024	0800122	EL 10UF-M 16V	C5005	0890101	CD CCT103Z50D3
C2025	0890035	CD 1000PF-K 50V B	C5006	0246445	CD 16PF-J CH 50V
C2050	0800122	EL 10UF-M 16V	C5007	0880044	PF 0.01UF-KEB 50V
C2051	0890037	CD 2200PF-M X 16V	C5008	0800344	EL 330UF-M(SMG) 16V
C2052	0890037	CD 2200PF-M X 16V	C5009	0800141	EL CE04W1C470MB(SRA)
C2053	0890011	CD 15P 50V	C5010	0880044	PF 0.01UF-KEB 50V
C2501	0890044	CD 22000PF-Z Y 16V	C5011	0800119	EL 4.7UF-M 50V
C2502	0890022	CD 100PF-K B 50V	C5012	0880053	PF 0.047UF-KEB 50V
C2503	0800112	EL 2.2UF-M 50V	C5020	0890101	CD CCT103Z50D3
C2504	0800351	EL 470UF-M 6.3V	C7001	0800117	EL CE04W1E4R7MB(SRA)
C2508	0890038	CD 3300PF-M X 16V	C7002	0800145	EL 100UF-M (SRA)
C2509	0800351	EL 470UF-M 6.3V	C7003	0800109	EL 1UF 50V
C2511	0800141	EL CE041C470MB(SRA)	C7004	0890032	CD 560PF-K B 50V
C2512	0800125	EL 10UF-M 50V	C7005	0880059	PF 0.15UF-KEB 50V
C2513	0880044	PF 0.01UF-KEB 50V	C7006	0880055	PF 0.068UF-KEB 50V
C2515	0880044	PF 0.01UF-KEB 50V	C7007	0800115	EL CE04W1H3R3MB(SRA)
C2516	0800335	EL 220UF-M (SMG) 16V	C7008	0800122	EL 10UF-M 16V
C2517	0880044	PF 0.01UF-KEB 50V	C7010	0880039	PF 0.047UF-KEB 50V
C2518	0880044	PF 0.01UF-KEB 50V	C7011	0890085	CD 680PF-K 50V
C2521	0800122	EL 10UF-M 16V	C7012	0800145	EL 100UF-M (SRA)
C2523	0800122	EL 10UF-M 16V	C7014	0800141	EL CE041WC470MB(SRA)
C2524	0890043	CD 10000PF-N Y 16V	C0213	0890013	CD 22PF J SL 50 T
C2525	0284639	EL 10UF 25V	C0214	0890046	CD 0.10 UF 50V
C2541	0890029	CD 390PF-K B 50V	C0215	0800351	EL 470UF-M 6.3V
C2542	0890044	CD 22000PF-Z Y 16V	C0216	0890043	CD 10000PF-N Y 16V
C2544	0890038	CD 3300PF-M X 16V	C0217	0890044	CD 22000PF-Z Y 16V
C2545	0890043	CD 10000PF-N Y 16V	C0218	0800351	EL 470UF-M 6.3V
C2551	0890045	CD 0.047 UF 50V	C0219	0880057	PF 0.1UF-KEB 50V
C2554	0800112	EL 2.2UF-M 50V	C0220	0890075	CD 120PF-K 50V
C2580	0800141	EL CE04W1C470MB(SRA)	C0223	0890019	CD 68PF J SL 50 T
C2581	0890043	CD 10000PF-N Y 16V	C0224	0800122	EL 10UF-M 16V
C2582	0800122	EL 10UF-M 16V	C0225	0890043	CD 10000PF-N Y 16V
C2583	0890078	CD 220PF-K 50V	C0226	0890073	CD 82PF-J 50V
C2584	0890087	CD 1000PF-K 50V	C0227	0800122	EL 10UF-M 16V
C2585	0890078	CD 220PF-K 50V	C0228	0890043	CD 10000PF-N Y 16V
C2586	0890037	CD 2200PF-M X 16V	C0229	0800122	EL 10UF-M 16V
C3001	0800361	EL 1000UF 16V	C0230	0890045	CD 0.047 UF 50V
C3002	0800145	EL 100UF-M (SRA)	C0231	0890038	CD 3300PF-M X 16V
C3003	0890022	CD 100PF-K B 50V	C0232	0800109	EL 1UF 50V
C3005	0880048	PF 0.022UF-KEB 50V	C0233	0800123	EL 1UF 50V
C3006	0800107	EL 47UF-M 50V	C0234	0890123	CD 47PF-J CH 50V
C3007	0800122	EL 10UF-M 16V	C0235	0890121	CD 33PF-J CH 50V
C3008	0800107	EL 47UF-M 50V	C0236	0800109	EL 1UF 50V
	0800122	EL 10UF-M 16V	C0237	0248696	CD 3901PF-J SL 50V
C3009	0800122	EL 10UF-M 16V	C0238	0800108	CD CCT5R0C50D3
C3010	0800107	EL 47UF-M 50V	C0239	0800122	EL 10UF-M 16V
C3011	0890013	CD 22PF J SL 50 T	C0240	0800122	EL 10UF-M 16V
	0890014	CD 27PF-K 50V SL	C0242	0800109	EL 1UF 50V
C3012	0800136	EL 33UF-M 25V	C0243	0880044	PF 0.01UF-KEB 50V

NOTE: * 13VR3B / ** 20VR4B

13VR3B/20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C0246	0800109	EL 1UF 50V	C1136	0890043	CD 10000PF-N Y 16V
C0247	0890043	CD 10000PF-N Y 16V	C1138	0890043	CD 10000PF-N Y 16V
C0248	0800109	EL 1UF 50V	C1151	0890045	CD 0.047UF 50V
C0249	0890114	CD 10PF-D CH 50V	C1152	0890022	CD 100PF-K B 50V
C0250	0890018	CD 56PF-J SL 50V	C1153	0890024	CD 150PF-K B 50V
C0251	0890023	CD 120PF-K B 50V	C1154	0890024	CD 150PF-K B 50V
C0252	0890121	CD 33PF-J CH 50V	C1155	0890043	CD 10000PF-N Y 16V
C0253	0890043	CD 10000PF-N Y 16V	C1156	0890044	CD 22000PF-Z Y 16V
C0255	0880044	PF 0.01UF-KEB 50V	C1157	0890008	CD 10PF J SL 50 T
C0256	0880044	PF 0.01UF-KEB 50V	C1158	0800049	EL 100UF-M 16V
C0257	0890046	CD 0.10UF 50V	C2101	0890045	CD 0.047UF 50V
C0258	0800109	EL 1UF 50V	HP01	2793312	CD (CAPRISTOR 471P365L)
C0259	0890046	CD 0.10UF 50V	HP02	2793312	CD (CAPRISTOR 471P365L)
C0260	0890044	CD 22000PF-Z Y 16V			
C0261	0800122	EL 10UF-M 16V			
C0264	0890116	CD 15PF-J CH 50V			
C0265	0890043	CD 10000PF-N Y 16V			
C0266	0800053	EL 100UF-M 50V			
C0267	0890075	CD 120PF-K 50V			
C0269	0890013	CD 22PF J SL 50 T			
C0274	0890019	CD 68PF J SL 50 T			
C0275	0890034	CD 820PF-K B 50V			
C0276	0890114	CD 10PF-D CH 50V			
C0280	0800138	EL 47UF-M 6.3V			
C0298	0890075	CD 120PF-K 50V			
C0299	0890072	CD 68PF-J 50V			
C0401	0800032	EL 33UF-M 16V			
C0402	0209641	CD 0.01UF 16V			
C0403	0284623	EL 1UF-SME(BP) 50V			
C0404	0800109	EL 1UF 50V			
C0405	0800007	EL 3.3UF-M 50V			
C0406	0800128	EL 22UF-M 16V			
C0407	0800109	EL 1UF 50V			
C0408	0890046	CD 0.01UF 50V			
C0409	0800125	EL 10UF-M 50V			
C0410	0890033	CD 680PF-K B 50V			
C0411	0890089	CD 1500PF-K 50V			
C0412	0890043	CD 10000PF-N Y 16V			
C0413	0890043	CD 10000PF-N Y 16V			
C0414	0800042	EL 47UF-M 25V			
C0415	0268449	CQ 92E2A473J			
C0418	0800003	EL 1.0UF-M 50V			
C0420	0800005	EL 2.2UF-M 50V			
C0423	0890044	CD 22000PF-Z Y 16V			
C0424	0800058	EL 220UF-M 16V			
C0425	0800122	EL 10UF-M 16V			
C0426	0800018	EL 10UF-M 50V			
C0428	0800018	EL 10UF-M 50V			
C0429	0800107	EL 47UF-M 50V			
C0430	0284667	EL 47UF-MBPR(SME) 16V			
C0431	0800015	EL 10UF-M 16V			
C0432	0800122	EL 10UF-M 16V			
C0439	0890033	CD 680PF-K B 50V			
C0471	0800015	EL 10UF-M 16V			
C0472	0890041	CD 6800PF-N X 16V			
C0473	0880044	PF 0.01UF-KEB 50V			
C1121	0890042	CD 10000PF-N Y 16V			
C1122	0890043	CD 10000PF-N Y 16V			
C1123	0890043	CD 10000PF-N Y 16V			
C1124	0890043	CD 10000PF-N Y 16V			
C1125	0890043	CD 10000PF-N Y 16V			
C1126	0890043	CD 10000PF-N Y 16V			
C1127	0890043	CD 10000PF-N Y 16V			
C1128	0890043	CD 10000PF-N Y 16V			
C1129	0890043	CD 10000PF-N Y 16V			
C1130	0890046	CD 0.10UF 50V			
C1131	0800186	EL 47UF 16V			
C1132	0890043	CD 10000PF-N Y 16V			

NOTE: * 13VR3B / ** 20VR4B

13VR3B/20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
D7006	2344041	DI 1SS254 / ISS270	RD02	0110275 **	MF 18K-J
D7007	1330011	DI DINS4		0110175 *	MF 18K-J
DD01	2344041	DI 1SS254 / ISS270		0110275 **	MF 18K-J
DD02	2344041	DI 1SS254 / ISS270	RD03	0110175 *	MF 18K-J
DD03	2344041	DI 1SS254 / ISS270		0110275 **	MF 18K-J
DH01	2344041	DI 1SS254 / ISS270	RD04	0100075 *	CF 1/8W 2.7K-J
Δ DH02	2339482	DI AS01		0113750 **	CF 1/2W 1K-J
Δ DH03	2339481	AS01Z	RD05	0100075 *	CF 1/8W 2.7K-J
DH04	2331785	ZD HZ-4		0113750 **	CF 1/2W 1K-J
Δ DH05	2339482	DI AS01	RD06	0100075 *	CF 1/8W 2.7K-J
DH06	2331806	ZD HZ-6		0113750 **	CF 1/2W 1K-J
DH07	2334303	ZD RD30E	RD07	0100047	CF 1/8W 180-JB
DH08	2332841	ZD HZ-11	Δ RD08	0150109	VR RV6 200-B
DH09	2344041	DI 1SS254 / ISS270	RD09	0100065 **	CF 1/8W 1K-J
DH10	2339825	ZD HZS-4		0100067 *	CF 1/8W 1.2K-J
DP02	2338532	DI EG01A	Δ RD10	0150112	VR RV6 2K-B
Δ DP03	2334591	DI EM1A (V)	RD11	0100047	CF 1/8W 180-J
Δ DP04	2334591	DI EM1A (V)	RD12	0100041 **	CF 1/8W 100-J
Δ DP05	2334591	DI EM1A (V)		0100043 *	CF 1/8W 120-J
Δ DP06	2334591	DI EM1A (V)	RD13	0100065 **	CF 1/8W 1K-J
DP07	2339481	DI AS01Z		0100067 *	CF 1/8W 1.2K-J
DP08	2339481	DI AS01Z	Δ RD14	0150112	VR RV6 2K-B
DP09	2339481	DI AS01Z	RD15	0100047	CF 1/8W 180-J
DP10	2339053	ZD HZS7B3L	Δ RD16	0150109	VR RV6 2K-B
DP11	2339461	DI AS01Z	Δ RD17	0100065 **	CF 1/8W 1K-J
DP12	2339481	DI AS01Z		0100067 *	CF 1/8W 1.2K-J
DP13	2344041	DI 1SS254 / ISS270	RD18	0150112	VR RV6 2K-B
DP51	2339491	DI AM01Z	RD22	0100133 **	CF 1/8W 680K-J
Δ DP53	2333003	DI RU-2AM	RH01	0119696 **	MF 0.51-K
Δ DP54	2359361	DI EL1ZV		0119731 *	MF 1W 0.68-K
Δ DP55	2339551	DI ED14 (V1)	RH02	0114281	CF 1/4W100K-J
Δ DP56	2348901	DI (D3L20U)	RH03	0700055	CF 1/16W 12K-J
DP58	2339871	ZD HZS11A1	RH04	0700048	CF 1/16W 3.9K-J
DP59	2344041	DI 1SS254 / ISS270	RH05	0110359	MF 3W 3.9K-J
Δ DP60	2339846	ZD HZS6B3	RH06	0113750 **	CF 1/2W 1K-J
DP61	2344041	DI 1SS254 / ISS270	RH07	0114219 **	CF 1/4W 56K-J
DP63	2344041	DI 1SS254 / ISS270		0114223 *	CF 1/4W 82K-J
DP64	2339491	DI AM01Z	RH08	0100105 *	CF 1/8W 47K-J
DP65	2339892	DI (HZS15-2TA)		0100107 **	CF 1/8W 56K-J
DP66	2344041	DI 1SS254 / ISS270	RH09	0700061	CF 1/16W 33K-J
DP67	2331849	ZD HZ12C3	RH10	0119505 *	MF 1/4W 2.2-J
Δ DP68	2335461	ZD HZ-24		0119512 **	MF 1/4W 1.0-J
DP69	2344041	DI 1SS254 / ISS270	RH11	0119838	MF 1/4W 0.5-J
DP70	2344041	DI 1SS254 / ISS270	RH12	0700034	CF 1/16W 330-J
DV01	2344041	DI 1SS254 / ISS270	RH13	0700045	CF 1/16W 2.2K-J
DV02	2339491	DI AM01Z	RH14	0114135	CF 1/4W 150-J
DV03	2337341	DI ISS270A	RH15	0100097	CF 1/8W 22K-J
DV04	2337341	DI ISS270A	RH16	0119838	MF 1/4W 0.5-J
DV05	2331806	ZD HZ-6	RH17	0119505	MF 1/4W 2.2-J
DV06	2339869	ZD HZS9C3	RH18	0700021 **	CF 1/16W 33-J
DZ01	2339837	ZD HZS-5C1		0700023 *	CF 1/16W 47-J
DZ02	2344041	DI 1SS254 / ISS270	RH19	0147532 **	WW 5W 4.7-J
ZD0901	2339881	ZD HZS12A1	RH20	0700038 **	CF 1/16W 680-J
ZD0902	2339847	ZD HZS6C1	RM02	0700045	CF 1/16W 2.2K-J
ZD0903	2339835	HZS5B2	RM03	0700035	CF 1/16W 390-J
ZD2502	2339963	DI HZS30	RM04	0700047	CF 1/16W 3.3K-J
ZD3001	2339887	ZD HZS12C1	RM05	0700048	CF 1/16W 3.9K-J
ZD3006	2339869	ZD HZS9C3	RM06	0700037	CF 1/16W 560-J
ZD3007	2339835	HZS5B2	RM07	0700051	CF 1/16W 5.6K-J
ZD5004	2339869	ZD HZS9C3	RM08	0700039	CF 1/16W 820-J
ZD5005	2339869	ZD HZS9C3	RP02	0110285	MF 2W 47K-J
ZD5006	2339869	ZD HZS9C3	RP03	0144151 **	WW 2W 33-J
ZD6001	2339869	ZD HZS9C3	RP04	0147614	WW 7W 1.5-K
ZD7005	2339875	ZD HZS11B2	RP05	0114211	CF 1/4W 27K-J
			RP06	0114211	CF 1/4W 27K-J
			RP07	0100023	CF 1/8W 18-J
			RP08	0700041	CF 1/16W 1.0K-J
			RP09	0100077	CF 1/8W 3.3K-J

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
RP10	0100077	CF 1/8W 3.3K-J	RV09	0119635	MF 1/8W 15K-F
RP11	0700051	CF 1/16W 5.6K-J	RV10	0700041	CF 1/16W 1.0K-J
RP12	0110101	MF 1W 15-J	RV11	0700041	CF 1/16W 1.0K-J
RP13	0144021	WWV 3W 0.22-K	RV12	0700041	CF 1/16W 1.0K-J
RP14	0700027	CF 1/16W 100-J	RV13	0700058	CF 1/16W 22K-J
RP15	0100077 *	CF 1/8W 3.3K-J	RV14	0700058	CF 1/16W 22K-J
	0100081 **	CF 1/8W 4.7K-J	RV17	0700041	CF 1/16W 1.0K-J
RP16	0700025	CF 1/16W 68-J	RV19	0700041	CF 1/16W 1.0K-J
Δ RP17	2340513	TH PTC	RZ20	0700041	CF 1/16W 1.0K-J
RP18	0700037	CF 1/16W 560-J	RZ21	0700054	CF 1/16W 10K-J
Δ RP19	0119512	MF 1/4W 1.0-J	RZ24	0700054	CF 1/16W 10K-J
RP20	0113774 *	CF 1/2W 10-J	RZ25	0700041	CF 1/16W 1.0K-J
	0113778 **	CF 1/2W 15K-J	RZ26	0700054	CF 1/16W 10K-J
RP54	0700051	CF 1/16W 5.6K-J	RZ27	0700054	CF 1/16W 10K-J
RP57	0700054	CF 1/16W 10K-J	RZ28	0700054	CF 1/16W 10K-J
RP58	0100053	CF 1/8W 330-J	RZ29	0700041	CF 1/16W 1.0K-J
RP62	0700041	CF 1/16W 1.0K-J	RZ31	0700041	CF 1/16W 1.0K-J
RP63	0700038	CF 1/16W 680-J	RZ32	0700054	CF 1/16W 10K-J
RP65	0100061	CF 1/8W 680-J	RZ33	0700054	CF 1/16W 10K-J
RP66	0100075	CF 1/8W 2.7K-J	RZ34	0700058	CF 1/16W 22K-J
RP67	0700049	CF 1/16W 4.7K-J	RZ35	0700058	CF 1/16W 22K-J
RP68	0700027	CF 1/16W 100-J	RZ37	0700041	CF 1/16W 1.0K-J
RP69	0110361 **	MF 3W 4.7K-J	RZ38	0700041	CF 1/16W 1.0K-J
	0110367 *	MF 3W 8.2K-J	RZ39	0700041	CF 1/16W 1.0K-J
RP70	0700058	CF 1/16W 22K-J	RZ55	0700041	CF 1/16W 1.0K-J
RP72	0700062	CF 1/16W 39K-J	RZ56	0700041	CF 1/16W 1.0K-J
RP73	0100097	CF 1/8W 22K-J	RZ57	0700041	CF 1/16W 1.0K-J
RP74	0100075	CF 1/8W 2.7K-J	RZ58	0700041	CF 1/16W 1.0K-J
RP75	0700073	CF 1/16W 2.2K-J	RZ60	0100065	CF 1/8W 1.0K-J
RP76	0700058	CF 1/16W 22K-J	RZ61	0700045	CF 1/16W 2.2K-J
RP77	0700058	CF 1/16W 22K-J	RZ62	0700045	CF 1/16W 2.2K-J
RP78	0700058	CF 1/16W 22K-J	RZ63	0700045	CF 1/16W 2.2K-J
RP79	0700063	CF 1/16W 47K-J	RZ64	0700041	CF 1/16W 1.0K-J
RP80	0700041	CF 1/16W 1.0K-J	RZ66	0113721	CF 1/2W 68-J
RP81	0700045	CF 1/16W 2.2K-J	Δ RF3001	0170494	MF 1/2W 100-J
RP82	0700059	CF 1/16W 27K-J	Δ RF4505	0170478	MF RF2R2J1-2P
RP87	0700047	CF 1/16W 3.3K-J	Δ RF4506	0101713	MF 1/4W 4.7-J
RP88	0700041	CF 1/16W 1.0K-J	RM0701	2574762	R/C MODULE SPS-409-1K
RP89	0700027	CF 1/16W 100-J	RT0601	AW10192	TM RESISTOR
RP90	0700054	CF 1/16W 10K-J	RT2007	AW10207	TM RESISTOR
RP91	0700054	CF 1/16W 10K-J	RT3031	5030275	TM RESISTOR
Δ RP92	0119512	MF 1/4W 1.0-J	R0046	0700054	CF 1/16W 10K-J
RV01	0113725	CF 1/2W 100-J	R0047	0700054	CF 1/16W 10K-J
RV02	0700065	CF 1/16W 68K-J	R0053	0700047	CF 1/16W 3.3K-J
RV03	0700058	CF 1/16W 22K-J	R0054	0700051	CF 1/16W 5.6K-J
RV04	0150290	VR RV06 50K-B	R0055	0700054	CF 1/16W 10K-J
RV05	0700037	CF 1/16W 560-J	R0057	0700048	CF 1/16W 3.9K-J
RV06	0700042	CF 1/16W 1.2K-J	R0058	0700045	CF 1/16W 2.2K-J
RV07	0700048	CF 1/16W 3.9K-J	R0296	0700041	CF 1/16W 1.0K-J
RV08	0119733	MF 1W 1.5-J	R0601	0700062	CF 1/16W 39K-J
RV09	0187048 **	CF 1/16W 200-J	R0602	0700041	CF 1/16W 1.0K-J
	0700031 *	CF 1/16W 180-J	R0603	0700045	CF 1/16W 2.2K-J
RV10	0700045	CF 1/16W 2.2K-J	R0604	0700073	CF 1/16W 270K-J
RV11	0113737	CF 1/2W 330-J	R0605	0700081	CF 1/16W 1.0M-J
RV12	0114165 *	CF 1/4W 1.5-J	R0606	0700058	CF 1/16W 22K-J
RV13	0700054	CF 1/16W 10K-J	R0607	0700041	CF 1/16W 1.0K-J
RV14	0700051	CF 1/16W 5.6K-J	R0608	0700081	CF 1/16W 1.0M-J
RV15	0700064	CF 1/16W 56K-J	R0609	0700061	CF 1/16W 33K-J
RV16	0700027	CF 1/16W 100-J	R0610	0700081	CF 1/16W 1.0M-J
RV17	0700056	CF 1/16W 15K-J	R0611	0700081	CF 1/16W 1.0M-J
RZ01	0700053	CF 1/16W 8.2K-J	R0612	0700062	CF 1/16W 39K-J
RZ02	0700051	CF 1/16W 5.6K-J	R0613	0700068	CF 1/16W 120K-J
RZ03	0700036	CF 1/16W 470-J	R0614	0700065	CF 1/16W 68K-J
RZ04	0700037	CF 1/16W 560-J	R0615	0700057	CF 1/16W 18K-J
RZ05	0700043	CF 1/16W 1.5K-J	R0616	0700051	CF 1/16W 5.6K-J
RZ06	0700057	CF 1/16W 18K-J	R0617	0700067	CF 1/16W 100K-J
RZ07	0700035	CF 1/16W 390-J	R0618	0700081	CF 1/16W 1.0M-J
RZ08	0700065	CF 1/16W 68K-J	R0619	0700064	CF 1/16W 56K-J

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R0620	0700049	CF 1/16W 4.7K-J	R0935	0700054	CF 1/16W 10K-J
R0621	0700038	CF 1/16W 680-J	R0936	0700058	CF 1/16W 22K-J
R0622	0700038	CF 1/16W 680-J	R0937	0700058	CF 1/16W 22K-J
R0623	0700041	CF 1/16W 1.0K-J	R0939	0700049	CF 1/16W 4.7K-J
R0624	0700063	CF 1/16W 47K-J		0700052 **	CF 1/16W 6.8K-J
R0625	0700081	CF 1/16W 1.0M-J	R0940	0700053	CF 1/16W 8.2K-J
R0626	0700049	CF 1/16W 4.7K-J	R0941	0700054	CF 1/16W 10K-J
R0627	0700041	CF 1/16W 1.0K-J	R0942	0700049	CF 1/16W 4.7K-J
R0628	2974432	JUMPER WIRE (0.5 L=52MM)	R0943	0700049	CF 1/16W 4.7K-J
R0629	0700041	CF 1/16W 10K-J	R0944	0700049	CF 1/16W 4.7K-J
R0630	0700079	CF 1/16W 820K-J	R0945	0700049	CF 1/16W 4.7K-J
R0631	0700041	CF 1/16W 1.0K-J	R0946	0101765	MF 1/8W 10K-J
R0632	0700063	CF 1/16W 47K-J	R0947	0700058	CF 1/16W 22K-J
R0633	0700063	CF 1/16W 47K-J	R0948	0700041	CF 1/16W 1.0K-J
R0636	0700063	CF 1/16W 47K-J	R0949	0700034	CF 1/16W 330-J
R0637	0700038	CF 1/16W 680-J	R0950	0700054	CF 1/16W 10K-J
R0638	0700045	CF 1/16W 2.2K-J	R0951	0700058	CF 1/16W 22K-J
R0639	0700061	CF 1/16W 33K-J	R0952	0700058	CF 1/16W 22K-J
R0643	0700063	CF 1/16W 47K-J	R0953	0700041	CF 1/16W 1.0K-J
R0644	0700063	CF 1/16W 47K-J	R0954	0700041	CF 1/16W 1.0K-J
R0645	0700067	CF 1/16W 100K-J	R0955	0700041	CF 1/16W 1.0K-J
R0646	0700072	CF 1/16W 220K-J	R0956	0700041	CF 1/16W 1.0K-J
R0647	0700041	CF 1/16W 1.0K-J	R0958	0700041	CF 1/16W 1.0K-J
R0650	0700041	CF 1/16W 1.0K-J	R0959	0700041	CF 1/16W 1.0K-J
R0651	0700041	CF 1/16W 1.0K-J	R0960	0700041	CF 1/16W 1.0K-J
R0701	0700041	CF 1/16W 1.0K-J	R0961	0700041	CF 1/16W 1.0K-J
R0702	0700039	CF 1/16W 820-J	R0962	0700041	CF 1/16W 1.0K-J
R0703	0700041	CF 1/16W 1.0K-J	R0964	0700051	CF 1/16W 5.6K-J
R0704	0700041	CF 1/16W 1.0K-J	R0965	0700041	CF 1/16W 1.0K-J
R0705	0700027	CF 1/16W 1.0K-J	R0966	0700057	CF 1/16W 18K-J
R0706	0700041	CF 1/16W 1.0K-J	R0967	0700045	CF 1/16W 2.2K-J
R0707	0700032	CF 1/16W 220-J	R0968	0700073	CF 1/16W 270K-J
R0708	0700043	CF 1/16W 1.5K-J	R0969	0700041	CF 1/16W 1.0K-J
R0709	0700029	CF 1/16W 150-J	R0970	0113725	CF 1/2W 100-J
R0710	0700044	CF 1/16W 1.8K-J	R0971	0700049	CF 1/16W 4.7K-J
R0711	0700027	CF 1/16W 100-J	R0972	0700041	CF 1/16W 1.0K-J
R0712	0700041	CF 1/16W 1.0K-J	R0973	0700041	CF 1/16W 1.0K-J
R0901	0101725	MF 1/4W 2.2-J	R0974	0700044	CF 1/16W 1.8K-J
R0902	0700057	CF 1/16W 18K-J	R0978	0700042	CF 1/16W 1.2K-J
R0903	0700034	CF 1/16W 330-J	R0983	0700044	CF 1/16W 1.8K-J
R0904	0700031	CF 1/16W 180-J	R0984	0700042	CF 1/16W 1.2K-J
R0906	0700032	CF 1/16W 220-J	R0985	0700081	CF 1/16W 1.0M-J
R0907	0700038	CF 1/16W 680-J	R0986	0700041	CF 1/16W 1.0K-J
R0908	0700049	CF 1/16W 4.7K-J	R0987	0700057	CF 1/16W 18K-J
R0909	0700066	CF 1/16W 82K-J	R0988	0700057	CF 1/16W 18K-J
R0910	0700066	CF 1/16W 82K-J	R0989	0700062	CF 1/16W 39K-J
R0911	0700061	CF 1/16W 33K-J	R0990	0700061	CF 1/16W 33K-J
R0912	0700061	CF 1/16W 33K-J	R0991	0700041	CF 1/16W 1.0K-J
R0913	0700041	CF 1/16W 1.0K-J	R0992	0700047	CF 1/16W 3.3K-J
R0914	0700041	CF 1/16W 1.0K-J	R0993	0700046	CF 1/16W 2.7K-J
R0915	0700059	CF 1/16W 27K-J	R0994	0700047	CF 1/16W 3.3K-J
R0916	0700041	CF 1/16W 1.0K-J	R0995	0700053	CF 1/16W 8.2K-J
R0917	0700049	CF 1/16W 4.7K-J	R0997	0700055	CF 1/16W 12K-J
R0918	0101868	CF 1/4W 4.7-J	R0998	0700061	CF 1/16W 33K-J
R0919	0700069	CF 1/16W 150K-J	R0999	0700056	CF 1/16W 15K-J
R0920	0700041	CF 1/16W 1.0K-J	R1000	0700036	CF 1/16W 470-J
R0921	0700045	CF 1/16W 2.2K-J	R1001	0700027	CF 1/16W 100-J
R0922	0700045	CF 1/16W 2.2K-J	R1002	0700067	CF 1/16W 100K-J
R0923	0700041	CF 1/16W 1.0K-J	R1003	0700067	CF 1/16W 100K-J
R0926	0700041	CF 1/16W 1.0K-J	R1005	0700037	CF 1/16W 560-J
R0927	0700041	CF 1/16W 1.0K-J	R1402	0700045	CF 1/16W 2.2K-J
R0928	0700041	CF 1/16W 1.0K-J	R1404	0700045	CF 1/16W 2.2K-J
R0929	0700041	CF 1/16W 1.0K-J	R1406	0700041	CF 1/16W 1.0K-J
R0930	0700041	CF 1/16W 1.0K-J	R1407	0700041	CF 1/16W 1.0K-J
R0931	0700041	CF 1/16W 1.0K-J	R1408	0700041	CF 1/16W 1.0K-J
R0932	0700045	CF 1/16W 2.2K-J	R1409	0700041	CF 1/16W 1.0K-J
R0933	0700045	CF 1/16W 2.2K-J	R2001	0700027	CF 1/16W 100-J
R0934	0700041	CF 1/16W 1.0K-J	R2002	0700041	CF 1/16W 1.0K-J

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R2003	0700061	CF 1/16W 33K-J	R3017	0700049	CF 1/16W 4.7K-J
R2004	0700061	CF 1/16W 33K-J	R3018	0700047 *	CF 1/16W 3.3K-J
R2005	0700039	CF 1/16W 820-J		0700048 **	CF 1/16W 3.9K-J
R2006	0700065	CF 1/16W 68K-J	R3019	0700041	CF 1/16W 1.0K-J
R2008	0187040	CF 1/16W 91-J	R3020	0700058	CF 1/16W 22K-J
R2009	0700033	CF 1/16W 270-J	R3021	0700054	CF 1/16W 10K-J
R2010	0700056	CF 1/16W 15K-J	R3022	0700054	CF 1/16W 10K-J
R2012	0100121	CF 1/8W 220K-J	R3023	0700041	CF 1/16W 1.0K-J
R2013	0100121	CF 1/8W 220K-J	R3024	0100133	CF 1/8W 680K-J
R2014	0700041	CF 1/16W 1.0K-J	R3025	0700041 *	CF 1/16W 1.0K-J
R2015	0700041	CF 1/16W 1.0K-J		0700043 **	CF 1/16W 1.5K-J
R2016	0700041	CF 1/16W 1.0K-J	R3026	0700063	CF 1/16W 47K-J
R2017	0700027	CF 1/16W 100-J	R3027	0700029	CF 1/16W 150-J
R2018	0100055	CF 1/8W 390-J	R3028	0700061	CF 1/16W 33K-J
R2019	0700029	CF 1/16W 150-J	R3029	0700041	CF 1/16W 1.0K-J
R2020	0700029 **	CF 1/16W 150-J	R3030	0700058	CF 1/16W 22K-J
R2020	0700032 *	CF 1/16W 220-J	R3032	0700056	CF 1/16W 15K-J
R2021	0700041	CF 1/16W 1.0K-J	R3033	0700027	CF 1/16W 100-J
R2022	0100119	CF 1/8W 180K-J	R3034	0700038	CF 1/16W 680-J
R2024	0113725	CF 1/2W 100-J	R3035	0700044	CF 1/16W 1.8K-J
R2025	0700046	CF 1/16W 2.7K-J	R3036	0113742	CF 1/2W 470-J
R2026	0700042	CF 1/16W 1.2K-J	R3037	0700032	CF 1/16W 220-J
R2027	0700023	CF 1/16W 47-J	R3038	0700034	CF 1/16W 330-J
R2028	0700033	CF 1/16W 270-J	R3048	0700063	CF 1/16W 47K-J
R2029	0700031	CF 1/16W 180-J	R3049	0700063	CF 1/16W 47K-J
R2501	0700054	CF 1/16W 10K-J	R3052	0700041	CF 1/16W 1.0K-J
R2502	0700041	CF 1/16W 1.0K-J	R3054	0700042	CF 1/16W 1.2K-J
R2503	0700041	CF 1/16W 1.0K-J	R3055	0700041	CF 1/16W 1.0K-J
R2504	0700041	CF 1/16W 1.0K-J	R3056	0700041	CF 1/16W 1.0K-J
R2505	0700041	CF 1/16W 1.0K-J	R3057	0700041	CF 1/16W 1.0K-J
R2506	0700041	CF 1/16W 1.0K-J	R3058	0700054	CF 1/16W 10K-J
R2516	0700064	CF 1/16W 56K-J	R4502	0700054	CF 1/16W 10K-J
R2518	0700041	CF 1/16W 1.0K-J	R4503	0700051	CF 1/16W 5.6K-J
R2519	0700023	CF 1/16W 47-J	R4504	0700045	CF 1/16W 2.2K-J
R2520	0187038	CF 1/16W 75-J	R4505	0700032	CF 1/16W 220-J
R2521	0100077	CF 1/8W 3.3K-J	R4506	0113725	CF 1/2W 100-J
R2522	0700037	CF 1/16W 560-J	R4507	0700054	CF 1/16W 10K-J
R2524	0100077	CF 1/8W 3.3K-J	R5001	0700028	CF 1/16W 120-J
R2533	0700027	CF 1/16W 100-J	R5002	0700035	CF 1/16W 390-J
R2534	0700036	CF 1/16W 470-J	R5003	0700063	CF 1/16W 47K-J
R2544	0700047	CF 1/16W 3.3K-J	R5004	0700061	CF 1/16W 33K-J
R2548	0700036	CF 1/16W 470-J	R5005	0700039 **	CF 1/16W 820-J
R2549	0700036	CF 1/16W 470-J		0700045 *	CF 1/16W 2.2K-J
R2550	0700063	CF 1/16W 47K-J	R5006	0700045	CF 1/16W 2.2K-J
R2551	0700036	CF 1/16W 470-J	R5007	0100121	CF 1/8W 220K-J
R2552	0700041	CF 1/16W 1.0K-J	R5008	0700052	CF 1/16W 6.8K-J
R2558	0700064	CF 1/16W 56K-J	R5009	0700054	CF 1/16W 10K-J
R2559	0700063	CF 1/16W 47K-J	R5010	0700037	CF 1/16W 560-J
R2560	0700043	CF 1/16W 1.5K-J	R5011	0700037	CF 1/16W 560-J
R2562	0700041	CF 1/16W 1.0K-J	R5012	0700037	CF 1/16W 560-J
R2581	0700034	CF 1/16W 330-J	R5013	0700054	CF 1/16W 10K-J
R2582	0700019	CF 1/16W 27-J	R5014	0100049	CF 1/8W 220-J
R2583	0700014	CF 1/16W 10-J	R5015	0100049	CF 1/8W 220-J
R3002	0700033	CF 1/16W 270-J	R5016	0100049	CF 1/8W 220-J
R3003	0113739	CF 1/2W 390-J	R5017	0700049	CF 1/16W 4.7K-J
R3004	0100051	CF 1/8W 270-J	R5018	0700049	CF 1/16W 4.7K-J
R3005	0700041	CF 1/16W 1.0K-J	R5019	0700049	CF 1/16W 4.7K-J
R3006	0100057	CF 1/8W 470-J	R5020	0700041	CF 1/16W 1.0K-J
R3007	0700041	CF 1/16W 1.0K-J	R5021	0700041	CF 1/16W 1.0K-J
R3008	0700034	CF 1/16W 330-J	R5022	0700041	CF 1/16W 1.0K-J
R3009	0700047	CF 1/16W 3.3K-J	R5023	0700041	CF 1/16W 1.0K-J
R3010	0700036	CF 1/16W 470-J	R5024	0700041	CF 1/16W 1.0K-J
R3011	0700036	CF 1/16W 470-J	R5026	0700036	CF 1/16W 470-J
R3012	0700027	CF 1/16W 100-J	R5027	0700036	CF 1/16W 470-J
R3013	0700041	CF 1/16W 1.0K-J	R5028	0700036	CF 1/16W 470-J
R3014	0700064	CF 1/16W 56K-J	R5029	0700037	CF 1/16W 10K-J
R3015	0700055	CF 1/16W 12K-J	R6001	0700027	CF 1/16W 100-J
R3016	0700051	CF 1/16W 5.6K-J	R6002	0700058	CF 1/16W 22K-J

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R7001	0700041	CF 1/16W 1.0K-J	R0403	0700052	CF 1/16W 6.8K-J
R7002	0700041	CF 1/16W 1.0K-J	R0404	0700053	CF 1/16W 8.2K-J
R7003	0700063	CF 1/16W 47K-J	R0405	0700051	CF 1/16W 5.6K-J
R7004	0100055	CF 1/8W 390-J	R0406	0700052	CF 1/16W 6.8K-J
R7005	0700041	CF 1/16W 1.0K-J	R0407	0700081	CF 1/16W 1.0M-J
R7006	0100123	CF 1/8W 270K-J	R0408	0700047	CF 1/16W 3.3K-J
R7007	0100125	CF 1/8W 330K-J	R0409	0700045	CF 1/16W 2.2K-J
R7008	0700044	CF 1/16W 1.8K-J	R0412	0700049	CF 1/16W 4.7K-J
R7009	0700053	CF 1/16W 8.2K-J	R0413	0700036	CF 1/16W 470-J
R7010	0700021 **	CF 1/16W 33-J	R0414	0700058	CF 1/16W 22K-J
	0700024 *	CF 1/16W 56-J	R0415	0700009	CF 1/16W 4.7-J
R7011	0700034	CF 1/16W 330-J	R0416	0700049	CF 1/16W 4.7K-J
R7012	0700037	CF 1/16W 560-J	R0417	0700023	CF 1/16W 47-J
R7013	0700037	CF 1/16W 560-J	R0419	0700054	CF 1/16W 10K-J
R7014	0700035	CF 1/16W 390-J	R0420	0700046	CF 1/16W 2.7K-J
R7015	0700041	CF 1/16W 1.0K-J	R0421	0700074	CF 1/16W 330K-J
R7016	0700049	CF 1/16W 4.7K-J	R0422	0700045	CF 1/16W 2.2K-J
R7017	0113754 **	CF 1/2W 1.5K-J	R0423	0700052	CF 1/16W 6.8K-J
	2974432 *	JUMPER WIRE (0.5 L=52MM)	R0430	0700052	CF 1/16W 6.8K-J
R7018	0113754 **	CF 1/2W 1.5K-J	R0441	0700036	CF 1/16W 47K-J
	2974432 *	JUMPER WIRE (0.5 L=52MM)	R0450	0700048	CF 1/16W 3.9K-J
RT0201	5006234	VR RT-63V 1K-B	R0452	0700064	CF 1/16W 56K-J
R0201	0700027	CF 1/16W 100-J	R0453	0700031	CF 1/16W 180-J
R0202	0700041	CF 1/16W 1.0K-J	R0454	0700064	CF 1/16W 56K-J
R0203	0700037	CF 1/16W 560-J	R0460	0700041	CF 1/16W 1.0K-J
R0204	0700035	CF 1/16W 390-J	R0461	0700044	CF 1/16W 1.8K-J
R0205	0700041	CF 1/16W 1.0K-J	R0471	0700041	CF 1/16W 1.0K-J
R0206	0700035	CF 1/16W 390-J	R0472	0700049	CF 1/16W 4.7K-J
R0207	0700046	CF 1/16W 2.7K-J	R0473	0700047	CF 1/16W 3.3K-J
R0208	0700058	CF 1/16W 22K-J	R0474	0700049	CF 1/16W 4.7K-J
R0209	0700043	CF 1/16W 1.5K-J	R0475	0700027	CF 1/16W 100-J
R0210	0700027	CF 1/16W 100-J	R0499	0700039	CF 1/16W 820-J
R0211	0700027	CF 1/16W 100-J	R1121	0700058	CF 1/16W 22K-J
R0216	0700028	CF 1/16W 120-J	R1122	0700058	CF 1/16W 22K-J
R0221	0700053	CF 1/16W 8.2K-J	R1123	0700043	CF 1/16W 1.5K-J
R0228	0700045	CF 1/16W 2.2K-J	TP2501	0116501	CARBON FILM RESISTOR
R0230	0700043	CF 1/16W 1.5K-J			
R0232	0700042	CF 1/16W 1.2K-J			
R0234	0700032	CF 1/16W 220-J			
R0235	0700049	CF 1/16W 4.7K-J	Q0007	2327772	TR 2SC3413 B/C
R0236	0700045	CF 1/16W 2.2K-J	Q0008	2327772	TR 2SC3413 B/C
R0238	0700046	CF 1/16W 2.7K-J	Q0201	2325711	TR 2SA933S
R0239	0700038	CF 1/16W 680-J	Q0202	2327772	TR 2SC3413 B/C
R0241	0700068	CF 1/16W 120K-J	Q0207	2327772	TR 2SC3413 B/C
R0247	0700053	CF 1/16W 8.2K-J	Q0210	2327772	TR 2SC3413 B/C
R0248	0700047	CF 1/16W 3.3K-J	Q0211	2327772	TR 2SC3413 B/C
R0249	0700054	CF 1/16W 10K-J	Q0213	2326873	TR DTC144ES
R0250	0700041	CF 1/16W 1.0K-J	Q0214	2326873	TR DTC144ES
R0251	0700041	CF 1/16W 1.0K-J	Q0215	2325711	TR 2SA933S
R0252	0700032	CF 1/16W 220-J	Q0216	2327772	TR 2SC3413 B/C
R0253	0700036	CF 1/16W 470-J	Q0217	2327772	TR 2SC3413 B/C
R0255	0700036	CF 1/16W 470-J	Q0219	2327772	TR 2SC3413 B/C
R0256	0700036	CF 1/16W 470-J	Q0225	2326873	TR DTC144ES
R0257	0700027	CF 1/16W 100-J	Q0230	2326873	TR DTC144ES
R0258	0700081	CF 1/16W 1.0M-J	Q0351	2326873	TR DTA144ES
R0259	0700066	CF 1/16W 82K-J	Q0352	2326873	TR DTC144ES
R0260	0700041	CF 1/16W 1.0K-J	Q0404	2326873	TR DTC144ES
R0261	0700045	CF 1/16W 2.2K-J	Q0408	2320945	TR 2SC1214 C/D
R0262	0700027	CF 1/16W 100-J	Q0411	2325702	TR 2SA854S Q/R
R0291	0700054	CF 1/16W 10K-J	Q0412	2327772	TR 2SC3413 B/C
R0292	0700042	CF 1/16W 1.2K-J	Q0471	2320945	TR 2SC1214 C/D
R0293	0700058	CF 1/16W 22K-J	Q0480	CF10281	TR 2SK1272
R0294	0700059	CF 1/16W 27K-J	Q0903	2325703	TR 2SA854S
R0295	0700041	CF 1/16W 1.0K-J	Q0904	2326873	TR DTC144ES
R0298	0700041	CF 1/16W 1.0K-J	Q0910	2327772	TR 2SC3413 B/C
R0354	0700054	CF 1/16W 10K-J	Q0911	2326873	TR DTC144ES
R0401	0700028	CF 1/16W 120-J	Q0913	2326873	TR DTC144ES
R0402	0700074	CF 1/16W 330K-J	Q0914	2326873	TR DTC144ES

NOTE: * 13VR3B / ** 20VR4B

13VR3B/20VR4B

13VR3B/20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
Q0915	2326873	TR DTC144ES	CP0471	5163022	COIL (12K LPF)
Q0916	2326873	TR DTA144ES	LD01	2122957 **	COIL-AXIAL 120UHK
Q0920	2326873	TR DTC144ES	LD02	2122957 **	COIL-AXIAL 120UHK
Q0981	2326873	TR DTC144ES	LD03	2122957 **	COIL-AXIAL 120UHK
Q0982	2326873	TR DTC144ES	LD04	2122092 *	FIX. INDUC.-FL-11H470K
Q0983	2326873	TR DTC144ES		2122095 **	FIX. INDUC.-FL-11Z27UHK
Q2001	2327772	TR 2SC3413 B/C	LH02	2125808	COIL (LHL08 68UH)
Q2002	2325702	TR 2SA854S Q/R	LH03	2123462 **	FERRITE BEADS B 2.3UH
Q2003	2327772	TR 2SC3413 B/C	Δ LP01	BZ00661	LINE FILTER 170UH
Q2004	2320144	TR 2SC1906	Δ LP02	BZ00651	LINE FILTER 2UH
Q2101	5324661	TR PT483F1H	LP03	2774631	FERRITE BEADS LEAD
Q2102	5324661	TR PT483F1H	LP04	2774631	FERRITE BEADS LEAD
Q2501	5327262	TR 2SB1326	LP06	2123462	FERRITE BEADS B 2.3UH
Q2502	2326873	TR DTC144ES	LP07	2123462	FERRITE BEADS B 2.3UH
Q2518	2327772	TR 2SC3413 B/C	LP08	2123468	FERRITE BEADS B 0.8UH
Q2523	2326873	TR DTC144ES	LP51	2123462	FERRITE BEADS B 2.3UH
Q2546	2325711	TR 2SA933S	LP52	2123462	FERRITE BEADS B 2.3UH
Q2581	2325711	TR 2SA933S	LP53	BH00205*	FILTER COIL 22UH
Q3001	2325702	TR 2SA854S Q/R		BH00212**	FILTER COIL 68UH
Q3002	2325702	TR 2SA854S Q/R	LP54	2123462	FERRITE BEADS B 2.3UH
Q3003	2325702	TR 2SA854S Q/R	LP55	2123462	FERRITE BEADS B 2.3UH
Q3004	2327772	TR 2SC3413 B/C	LP56	BH00205	FILTER COIL 22UH
Q3005	2325702	TR 2SA854S Q/R	LP57	2123462	FERRITE BEADS B 2.3UH
Q3006	2327772	TR 2SC3413 B/C	LP59	BH00205	FILTER COIL 22UH
Q3007	2327772	TR 2SC3413 B/C	LZ01	2123763	COIL 101K (EL0405)
Q3008	2327772	TR 2SC3413 B/C	LZ03	2123763	COIL 101K (EL0405)
Q3009	2325702	TR 2SA854S Q/R	LZ04	2146091	COIL-OSC VL-5R8C1L
Q3010	2327772	TR 2SC3413 B/C	LZ05	2123468	FERRITE BEADS B 0.8UH
Q3012	2327772	TR 2SC3413 B/C	L0202	5159144	COIL
Q3013	2327772	TR 2SC3413 B/C	L0204	5159145	COIL (22UH)
Q3014	2327772	TR 2SC3413 B/C	L0205	0770053	COIL
Q3015	2327772	TR 2SC3413 B/C	L0206	0770053	COIL
Q4501	2320663	TR 2SC1213A C	L0207	5159145	COIL (22UH)
Q5001	2327772	TR 2SC3413 B/C	L0208	5159143	COIL (15UH)
Q7001	2327772	TR 2SC3413 B/C	L0215	5159155	COIL (120UH)
Q7002	2327772	TR 2SC3413 B/C	L0216	0770057	COIL
QD01	2322565	TR 2SC2688(5)	L0218	5159153	COIL
QD02	2322565	TR 2SC2688(5)	L0401	0770057	COIL
QD03	2322565	TR 2SC2688(5)	L0402	0770057	COIL
QH01	2326216 **	TR 2SC3116 S/T	L0403	0770057	COIL
	2326611 *	TR 2SC2611 (09)	L0901	5159141	COIL (10UH)
Δ QH02	2327504 *	TR 2SD1876	L1102	0770053	COIL
	2327505 **	TR 2SD1877	L1401	5121611	COIL
QH03	2321112	TR 2SA778AK (02)	L1402	5159141	COIL (10UH)
QH04	2323521	TR 2SD789 B/C/D/E	L2001	5159146	COIL
QP01	2327783	TR 2SC3553 C/D	L2003	5159139	COIL
QP02	2327772	TR 2SC3413 B/C	L2004	2123781	FILTER COIL 101K
QP51	2312174	TR 2SD2375 (P)	L2006	5159146	COIL
QP52	2312174	TR 2SD2375 (P)	L2008	BJ00151	LC FILTER VCO 45.75MHZ
Δ QP53	2324322	TR 2SC2610-05 TZ	L2009	BH00291	COIL FOR AFS
QP54	2320663	TR 2SC1213A (C)	L2010	2123461	FERRITE BEADS B 0.8UH
QP55	2320647	TR 2SC1213 (C21/D21)	L2011	2123409	LAL02 0.68UH-K
QP56	2320663	TR 2SC1213A (C)	L2502	5121611	COIL
QP60	1321341	PWR TR (STR-2SD1765)	L2503	5121611	COIL
QP61	2320681	TR 2SA673A B/C	L2508	5121611	COIL
QP62	2320663	TR 2SC1213A (C)	L2510	5121611	COIL
QP63	2320647	TR 2SC1213 (C21/D21)	L3001	2125846	HLL-820KRL
QP65	2327772	TR 2SC3413 B/C	L3002	2166121	TRAP COIL 3.58MHZ
Δ QP66	2323782	THYRISTOR 03P2M	L5001	5159139	COIL
QV01	2327753	TR 2SA1390 C/D	L5002	5159139	COIL
QZ01	2327772	TR 2SC3413 B/C	L5003	2123781	FILTER COIL 101K
QZ02	2327783	TR 2SC3553 C/D	L7001	2123411	COIL AXIAL 1UH-K LAL02
			L7002	2123461	FERRITE BEADS B 0.8UH
			L7003	2123781	FILTER COIL 101K
			L7004	5159154	COIL (100UH)
			L7005	2123781	FILTER COIL 101K
BL0903	5272378	COIL (FERRITE)	MF2001	2142241	CERAMIC TRAP 4.5MHZ
BL0905	2123461	FERRITE BEADS B 0.8 MH	MF2002	2143882	FILTER CERAMIC 4.5MHZ
CP0202	5165382	COIL (LC FILTER)			

NOTE: * 13VR3B / ** 20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
MF2003	2168661	CDA4.5ME42	ED1	EF01701	01C-E0R0-361 (CPT)
MF7001	2168651	CSB503F45	ED01	2966823 *	3J RIBBON WIRE
T2001	2145961	IF COIL 1:3 INCORE		2966826 **	3J RIBBON WIRE
T0401	5230353	COIL	ED81	2909144 *	MR05C-B1061A331
				2909147 **	05C-B2R0-431
				2909081	MR03PC-B1061A241
				2974111S	SEH05C-B1007A600
				2656628	02C-A7R5-391
				2954615	01C-A5R0-271
				2974152S	SEH06C-B1007A271
				5842334	CONNECTOR
				5842328	CONNECTOR
				5846276	CONNECTOR
				5842335	CONNECTOR
				2909169	C0-06C-B2R0-221
				2909349	C0-12C-B2R0-221
				2974327	SEH12C-B2468A181
				2974215	SEH08C-B2468A361
				2974027	SEH02C-B2468A181
				2665271	3P PLUG PIN WITH BASE
				2969845	6P MICRO CONNECTOR
				2959062	PIN POST (PH12)
				2902261	PLUG PIN SUB MINI 2P
				2902272	PLUG PIN SUB MINI 12P
				2903542	2P PLUG PIN WITH BASE
				2959051	PIN POST (PH 2P)
				5669587	CONNECTOR
				2969845	6P MICRO CONNECTOR
				2969841	2P MICRO CONNECTOR
				5662826	PLUG
				5655102	PLUG
				5662826	PLUG
				2969842	3P MICRO CONNECTOR
				ED10161	PLUG
				5668197	PLUG
				2969847	8P MICRO CONNECTOR
				2969846	7P MICRO CONNECTOR
				5662816	PLUG
				5662816	PLUG
				2661756	1P PLUG PIN WITH BASE
				2959052	PIN POST (PH 3P)
				2959051	PIN POST (PH 2P)
				2969844	5P MICRO CONNECTOR
				2902264	PLUG PIN SUB MINI 5P
				2665272	4P PLUG PIN WITH BASE
				2903542 *	2P PLUG PIN WITH BASE
				2903544 **	4P PLUG PIN WITH BASE
				2902267	PLUG PIN SUB MINI 8P
				2902261	PLUG PIN SUB MINI 2P
				2902265	PLUG PIN SUB MINI 6P
				2982954	4P PIN PLUG
					REMOTE CONTROL
			U	HL00271	CLU-361VR
					FUSES
			FP01	2722212 *	FUSE AC2.5A
				2722357 **	FUSE AC04A
					SPEAKER
			UA1	GK00041	SPEAKER
					CONNECTORS
EA41	EF02341	2J PH-SM			
EA42	EF02351	SJ SM-LEAD			

NOTE: * 13VR3B / ** 20VR4B

13VR3B/20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
		TRANSFORMER	#360B	6500592	AC HEAD BASE
Δ TH01	2260291	HORIZONTAL LINE COIL	#360C	8741306	2.6X6 BIND SCREW
Δ TH02	BW00161 *	HFL1427G	#360D	8741312	2.6X12 BIND SCREW FZ
	BW00331 *	HEL1530G ASS	#360E	6554301	SPRING
Δ TP01	BT00072	COIL SWITCHING TRANS.	#360F	7773741	SCREW
			#370	6553151	SPRING
		COLOR PICTURE TUBE	#380	7785673	NUT
			#390	MJ00241	HSX X SCREW
V1	2470292 *	CRT A34KPU02XX	#400	6376294	CYLINDER BASE
	2471271 **	CRT A51KPD02XX	#420	0711312	2.6X12 PAN HEAD SCREW
		DEFLECTION YOKE	#430	5423081	MAGNETIC HDE-FE-HEAD
			#440	0671308	2.6X8 DT SCREW
LH1	2442477 *	DY-90-14ST3	#450	KX00151	PIE RELEASE PIECE
	2444907 **	DY-C90-21SF3	#400A	4319361	3X12 B-T SCREW WITH WASHER
		MISCELLANEOUS PARTS	#401A	4519502	SCREW 3X12 B TAPPING
			#404A	8671406	3X6 BIND HEAD SCREW
#010	4827412	HC SUB ASSY F1	#412A	QA10192	SHIELD CASE 13VR3B
	NA03311	EARTH METAL VC2	#414A	MD10592	SHIELD PLATE 13VR3B
	UH10111	AF CHASSIS MET ASSY	#416A	MD10601	FBT SHIELD VC2
#020	6824064	ROLLER	#417A	8815114	3 LOCK WASHER
	6405184	TAKE UP GEAR	#418A	4319361	3*12 B-T SCREW WITH WASHER
#030	7788341	WASHER	#420A	NT00251	WYC PWB HOLDER
#040	6406291	PLASTIC PARTS FOR VTR	#422A	4519511	4X12 B TAPPING SCREW
#050	7788341	WASHER	#424A	4137974	4X12 TAPPING WITH WASHER
#060	6401445	FR ARM AS	#426A	0671305	2.6X5 DT TAPPING SCREW
#070	6522979	SPRING	#428A	8815123	2.6 LOCK WASHER
#080	6500841	WASHER	#430A	8815114	3 LOCK WASHER
#090A	4585903	G ROLLER BASE I AS	#440A	3787484	PCB HOLDER 3L
#090B	KX00161	GR PIECE2	#450A	NT00261	FBT HOLDER VC2
#090C	KG00001	G ROLLER PAS J	#452A	4319361	3X12 B-T SCREW WITH WASHER
#100A	KX00201	N PROTECTOR	#5011	6823551	LED HOLDER
#100B	4585933	G ROLLER BASE 0 AS	#5012	6823561	PHOTO TR HOLDER
#100C	KX00161	GR PIECE2	#5013	6823581	PHOTO TR HOLDER
#100D	KG00001	G ROLLER PAS J	#5014	6823581	REEL S HOLDER
#110	6500463	LOAD GEAR R AS	#5015	6823592	REEL S HOLDER
#120	6500507	LOAD GEAR L AS	#0005	MD10502	PRE AMP SHIELD CASE VC2
#140	MJ10251	SCREW	#0006	MD10151	METAL PARTS FOR VTR
#150	6823538	MODE GEAR	#0010	NT10183	CHAS FRAME VC2
#160	KX10181	HOLD PLATE B FI	#0020	NA10251	BRACKET
#170	MJ10251	SCREW	#0030	0671305	2.6X5 DT TAPPING SCREW
#180	6823542	PL MIDDLE GEAR	#0041	5794281	CYLINDER BRUSH
#190	6406332	TAKE UP PULLEY	#0042	0711312	2.6X12 PAN HEAD SCREW
#195	6358591	CAP F	#0043	HQ10244	CYLINDER(CY-G4NN-G)
#200	6500841	WASHER	#0044	7775582	SCREW (C)
#210	GP10123	DC MOTOR (CAPSTAN)	#0045	8741408	3X8 BIND SCREW
#220	8691306	2.3X6 BT SCREW	#0060	7429641	MECHA HOLDING BRACKET
#230	6358101	BAND (REEL BELT)	#0070	7781132	3X10 BT SCREW
#240	6823424	PLASTIC PART FOR VTR	#0090	4319361	3X12 B-T SCREW WITH WASHER
#250	6553361	SPRING	#0092	3724441	PCB SPACER
#260	6823437	PLASTIC PART FOR VTR	#0110	0671305	2.6X5 DT TAPPING SCREW
#270	6553301	SPRING	#0120	8679408	3X8 DT SCREW
#280	KK00012	PBX T BAND AS	#0901	3708104	G7-X4 A LED HOLDER
#290	6823511	MOLD SHAFT	E01	2745411	AC POWER CORD
#300	6500883	T ARM CAS	E02	2721351	FUSE HOLDER
#310	6553352	SPRING	E04	3739671	BS CORD HOLDER
#320	6638936	METAL PART FOR VTR	E06	2782611	CENTER PIN
#330	6823521	P CAM GEAR	E07	2661756 **	1P PLUG PIN WITH BASE
#340	6823445	CASSETTE LIP	JD01	2698673 **	CPT SOCKET
#350	6500431	PINCH ROLLER ASSY		2953641 *	CPT SOCKET
#240	0711306	SCREW 2.6X12 PAN HEAD	NH01	3445332	HEAT SINK
#250	0711312	2.6X12 PAN HEAD SCREW	NH02	4520883	3X12 SCREW WITH WASHER
#270	0671308	2.6X8 DT SCREW	NH03	3701273 **	PLASTIC RIVET FBT V0
#280	0711312	2.6X12 PAN HEAD SCREW	NP01	4339145	HEAT SINK
#120	MD01151	SHIELD CASE WYC PWB	NP02	4520883	3X12 SCREW WITH WASHER
#360A	5434153	MAGNETIC ACE HEAD	NP03	3446473	HEAT SINK H30 P10
			NP04	4520883	3X12 SCREW WITH WASHER
			NP05	MC00101**	HEAT SINK H50 P10 17
				3446479 *	HEAT SINK H50 P10 17

NOTE: * 13VR3B / ** 20VR4B

13VR3B/20VR4B

SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
NP06	4520883	3X12 SCREW WITH WASHER			
NP07	2941311	MANGAN DRY BATTERY			
NP08	2784342	CONDENSER COVER			
NP10	2784342	CONDENSER COVER			
NP12	2784342	CONDENSER COVER			
NP13	2784342	CONDENSER COVER			
NP2A	3734531	NP3 LEAD CLAMP B			
NP4A	3731082	PURSE LOCK 11.5			
NP5A	3749611	PURSE LOCK (5)			
NV01	4339146	HEAT SINK			
NV02	4520883	3X12 SCREW WITH WASHER			
TU2501	2428681	TUNER ET-352A			
HZ02	2791752R	CONDENSER 3 TERMINAL 33PF			
#01	4521392 *	HEXAGONAL DT SCREW			
#02	4520232 *	4X16 D TAPPING SCREW			
#03	4519511 *	4X12 B TAPPING SCREW			
#04	MN00472 *	PVC SPACER			
#100	QD01472 *	FRAME ASSY 13VR3B			
#101	QD00626 *	FRONT FRAME 13VR3B			
#102	PH01191 *	C14-VC2			
#103	PH01183 *	DOOR 13VR3B			
#104	PC00503 *	POWER BUTTON 13VR3B			
#105	PC00493 *	BUTTON BLOCK 13VR3B			
#106	PH01171 *	LAMP LENS VC2			
#107	PU00072 *	IN DOOR PLATE 13VR L			
#1071	PU00082 *	IN DOOR PLATE 13VR R			
#108	3332453 *	E60 KNOB SPRING			
#109	3875771 *	LATCH 4TO2 NYLON			
#110	4519511 *	4X12 B TAPPING SCREW			
#111	PH01275 *	CASSETTE DOOR 13VR3B			
#112	6551851 *	CASSETTE DOOR SPRING VC2			
#200	QD00604 *	REAR COVER 13VR3B			
ED1	2786562 *	CRT EARTH WIRE			
ED2	BZ00381	DEGAUSSING COIL			
ND1	4615642 *	WEDGE			
ND2	3332021 *	GX EARTH SPRING			
ND3	3705233 *	CLAMP ANODE			
ND4	3728273 *	PURSE LOCK (8)			
ND9	3733241 *	NP3 LEAD CRAMP			
#011	4521392 **	HEXAGONAL DT SCREW			
#012	4520232 **	4X16 D TAPPING SCREW			
#013	4519511 **	4X12 B TAPPING SCREW			
#100	QD01481 **	FRAME ASSY 20VR4B			
#101	QD01114 **	FRONT FRAME 20VR4B			
#103	PH01693 **	DOOR 20VR4B			
#104	PC00504 **	POWER BUTTON 20VR4B			
#105	PC00494 **	BUTTON BLOCK 20VR4B			
#106	PH01172 **	LAMP LENS C21-VC2			
#107	PP00132 **	IN DOOR PLATE 20VR4B			
#108	3332453 **	E60 KNOB SPRING			
#109	3875771 **	LATCH 4TO2 NYLON			
#110	4519511 **	4X12 B TAPPING SCREW			
#111	PH01275 **	CASSETTE DOOR 13VR3B			
#112	6551851 **	CASSETTE DOOR SPRING VC2			
#114	4732752 **	DOOR CUSHION 20VR4B			
#200	QD01134 **	REAR COVER 20VR4B			
#300	MS00111	HIMERON VC2			
A01	2786562 **	CRT EARTH WIRE			
ED2	BZ00671 **	DEGAUSSING COIL			
ND1	4615642 **	WEDGE			
ND10	3733241 **	NP3 LEAD CRAMP			
ND11	3731082 **	PURSE LOCK 11.5			
ND12	3728273 **	PURSE LOCK (8)			
ND2	3332022 **	EARTH SPRING			
ND3	3705233 **	CLAMP ANODE			
ND4	0649009	HOOK-30			
ND5	2776242 **	CONVEGENCE FREE MAGNET			
ND8	3763751 **	SK BINDER			

NOTE: * 13VR3B / ** 20VR4B

HITACHI